HELMINTHOLOGICAL ABSTRACTS

Vol. I, No. 3.

99—Agricultural Gazette of New South Wales.

a. EDWARDS, E. T.—" Stem nematode disease of lucerne, with review of literature concerning the causal organism *Tylenchus dipsaci* (Kuhn) Bast." pp. 305-314. [April, 1932.], pp. 345-356, 5 figs., 2 tables, 47 refs. [May, 1932.]

(a) Edwards gives a detailed account of the disease caused by *Tylenchus dipsaci* in lucerne. The history of the parasite, symptoms of attack shown by various hosts, morphology and life cycle are described, and the parasitism, biological specialization, and resistance to adverse conditions of the nematode are discussed.

Flooding and irrigation are reported to be common methods by which the parasite is spread throughout the lucerne-growing district in New South Wales, while it may also be introduced to clean land by infected seed. A treatment for destroying nematode infections in lucerne-seed by immersion in water at 116° to 129° F. for 15 minutes is described. For cleaning infected land the burning of refuse, exclusion of clovers, trefoils and other susceptible weeds from headlands, and rotation of immune crops are recommended. Under New South Wales conditions potatoes or cereals may be safely used in the rotation. To control the spread of the disease disinfection of farm implements and the feeding of stock from troughs rather than from lucerne scattered on the ground are advised.

M.J.T.

100—Agricultural Journal of Barbados.

a. TUCKER, R. W. E.—" A survey of the position of *Phytalus smithi*, Arrow, and its natural enemies in Barbados." I (1), 18-23. [January, 1932.]

(a) Tucker cites Nematodes as occasional parasites of *Phytalus smithi* Arrow, but estimates their value as agents of biological control as negligible.

M.J.T.

101—American Journal of Hygiene.

a. FOSTER, A. O. & CORT, W. W.—" The relation of diet to the susceptibility of dogs to *Ancylostoma caninum*." XVI (1), 241-265, 4 tables, 4 graphs, 24 refs. [July, 1932.]

b. ONORATO, A. R.—" The effects of temperature and humidity on the ova of *Toxocara canis* and *Trichuris vulpis*." XVI (1), 266-287, 11 tables, 12 refs. [July, 1932.]

c. NOLF, L. O.—" Experimental studies on certain factors influencing the development and viability of the ova of the human trichuris as compared with those of the human ascaris." XVI (1), 288-322, 8 figs., 8 tables, 27 refs. [July, 1932.]

(a) Foster & Cort were able to establish definitely a relationship in the dog between the diet and the susceptibility of the host to *Ancylostoma caninum.*

In two dogs there had already developed a strong immunity by means of which they were able to resist enormous doses of larvæ. When placed on a diet deficient in all the vitamins and poor in mineral salts and proteins, this resistance was broken down and heavy infestations of hookworm resulted from small doses of larvæ. When they were returned to a normal diet, the resistance was quickly built up again as evidenced by the spontaneous loss of worms and the decreased egg production.

Further experiments showed an increased egg production without the administration of new doses of larvæ, in dogs when transferred to this deficient diet. This indicates that in highly resistant animals some of the worms administered are not eliminated but remain in the gut in a retarded state of development. The writers comment on this incomplete immunity. The data, egg counts and the estimation of the loss of worms from the gut, were all obtained from the examination of fæces.

P.A.C.

(b) Some experiments were made by Onorato on ova of *Toxocara canis* and *Trichuris vulpis* of the dog to determine their resistance to various degrees of dessication at various temperatures.

Development proceeded best at 30° C. in a saturated atmosphere, being slower at lower temperatures, while 37° C. was lethal to the Ascarid. The minimum amount of water necessary for the development of *T. canis* was contained in an atmosphere of 76 per cent. humidity, 40 per cent. of the ova developing, though all degenerated if left in this partial saturation for any length of time. Trichuris ova did not develop under these conditions but remained viable and underwent development when brought under more favourable conditions. The moisture requirements of both species increase as the temperature is raised.

Trichuris eggs need a longer time for development than *T. canis* eggs ; hence in areas of low rainfall, where there is little shade to help in retaining the moisture, the incidence of human trichuris is lower than that of human ascaris.

P.A.C.

(c) An account is given by Nolf of some physical factors affecting the survival and development of Trichuris and Ascaris ova.

The gas exchange in developing *Trichuris trichura* ova is discussed. In the early stages of development R.Q. is high but falls from unity to 0.75 in 15 days, after which it rises slightly to 0.80 in the next 5 days. He discusses these figures in the light of previous data obtained from hookworm and *Ascaris megalocephala.* The nitrogen content does not vary, supporting the view that the " fibrous membrane " is impermeable to it.

Other experiments show that the oxygen requirements of Trichuris ova are not different from those of Ascaris. Trichuris are more affected by partial dryness of the atmosphere and succumb more quickly to complete dessication than Ascaris. The range of temperature under which Trichuris can develop is smaller than that of Ascaris.

Finally the effect of ultra-violet light is considered. Here Trichuris eggs were more resistant : the brown pigmentation of the shell probably affording some degree of protection. P.A.C.

102—American Journal of the Medical Sciences.

a. REIFENSTEIN, E. C., ALLEN, E. G. & ALLEN, G. S.—" Trichiniasis. A discussion, with reference to 11 recovered cases in a family." CLXXXIII (5), 668-678, 1 pl., 2 tables, 53 refs. [May, 1932.]

(a) In eleven cases of Trichiniasis, occurring in a single family, Reifenstein, Allen & Allen note that there is a considerable variation in the degree of eosinophilia ranging from 10 per cent. to 37 per cent. of the white cells 18 days after infestation and dropping to 1 per cent. to 13 per cent. six months later. The spleen was palpable in 4 of the cases during the first three weeks and in 7 out of 10 six months later. No embryos or adults were found in the stool in the only case in which diarrhœa occurred. R.T.L.

103—Annales de Parasitologie Humaine et Comparée.

a. MEHRA, H. R.—" Classification de la famille des *Pronocephalidæ* Looss." X (4), 323-329, 12 refs. [July, 1932.]

b. LARROUSSE, F.—" Remarques au sujet du sarcome a cysticerques dans le foie du rat." X (4), 330-333, 1 pl. [July, 1932.]

c. MICHAJLOW, W.—" Les adaptations graduelles des copépodes comme premiers hôtes intermédiaires de *Triænophorus nodulosus* Pall." X (4), 334-344, 4 refs. [July, 1932.]

(a) Mehra compares the classification of the *Pronocephalidæ* published by Price in 1931 with that published by himself early in 1932. He now divides the family into five subfamilies :—

1. PRONOCEPHALINÆ for *Pronocephalus* Looss 1899 and *Cricocephalus*, *Macrovestibulum*, *Astrorchis*, *Pyelosomum*, *Adenogaster*, *Pleurogonius*, *Glyphicephalus*, *Barisomum* and *Epibathra*.
2. NEOPRONOCEPHALINÆ Mehra 1932, for *Neopronocephalus* Mehra 1932.
3. CHARAXICEPHALINÆ Price 1931 for *Charaxicephalus* Looss 1901 and *Diaschistorchis* and *Desmogonius*.
4. HIPPOCREPINÆ Mehra 1932 for *Hippocrepis* Travassos 1922.
5. OPISTHOPORINÆ Price 1931 for *Opisthoporus* Fukui 1929. R.T.L.

(b) Larrousse discusses the mode of production of sarcoma in the rat's liver by the *Cysticercus fasciolaris*. He believes that in certain cases there are specific receptive cells which are capable of fixing virus or toxins produced by the worm and that sarcoma only occurs when these cells are present in the reactive host membrane which surrounds the parasite. R.T.L.

(c) Michajlow has studied the susceptibility of various species of *Cyclopidæ* to infection with the bothriocephalid *Triænophorus nodulosus*. The procercoids were developed in ten species, viz., in *Diaptomus gracilis*, *Cyclops strenuus*, *C. insignis*, *C. leuckarti*, *C. oithonoides*, *C. bicuspidatus*, *C. vernalis*, *C. fuscus*, *C. albidus*, and *C. serrulatus*. The author discusses the various factors which determine the course of larval development.

R.T.L.

104—Annals and Magazine of Natural History.

a. NAZMI, M.—"*Diplostomum tregenna*, sp. n., a new trematode parasite of the Egyptian kite." (Ser. 10), IX (54), 567-573, 2 figs., 12 refs. [June, 1932.]

b. OZAKI, Y.—"A new trematode, *Leurosoma orientale*, gen. et sp. n., from the turtle, *Ocadia sinensis* Gray." (Ser. 10), X (55), 42-45, 1 fig. [July, 1932.]

(a) Nazmi has not found a single nematode or cestode in about a dozen Egyptian Kites. Trematodes of the families Heterophyidæ and Strigeidæ were well represented and one species of Acanthocephala was collected. The paper describes in detail a new species *Diplostomum tregenna* found at Cairo. This differs from the 12 known members of the genus in the shape and disposition of the testes and ovary.

R.T.L.

(b) From the tissues of the lung of *Ocadia sinensis* Ozaki obtained the triangular eggs of a species of *Hapalorhynchus* and oval yellow eggs of a new trematode genus *Leurosoma* related to *Brachysaccus* Johnston. It differs in the extent of the uterus, for the coils are confined between the ovary and the testes and there is no convolution between the acetabulum and ovary. It differs also from *Opisthoglyphe* in the median position of the ovary and in the situation of the testes which lie side by side in the posterior end of the body. The genus *Leurosoma* is proposed as the type of a new sub-family of Plagiorchidæ to include *Brachysaccus*, *Dolichosaccus* and *Opisthoglyphe*.

R.T.L.

105—Archiv für Schiffs- und Tropen-hygiene.

a. FÜLLEBORN, F.—"Ueber den Saugakt der Stechmücken." XXXVI (4), 169-181, 5 figs., 6 refs. [April, 1932.]

b. MÜHLENS, P.—"Über Filarieninfektionen in Süd- und Mittelamerika, insbesondere *Onchocerca cæcutiens* in Mexiko." XXXVI (5), 287-300. [May, 1932.]

c. HILLER, W.—"Zur Diagnose der Ankylostomiasis." XXXVI (6), 343-344. [June, 1932.]

d. VOGEL, H.—"Hauterscheinungen bei Schistosomiasis. Beobachtungen über Zerkarien-Dermatitis Kutanreaktionen und ein Vulva-Granulom." XXXVI (7), 384-399, 10 figs., 19 refs. [July, 1932.]

e. GRAUBNER, F.—"Überseeische Ankylostomiasis im Tropengenesungsheim Tübingen." XXXVI (8), 429-439, 18 tables, 15 refs. [August, 1932.]

(a) Fülleborn has made a detailed study of the sucking mechanism in female *Anopheles maculipennis*. That the mechanism is reflex is shown by the fact that poisonous liquids are as freely taken up as water or blood. [This is not actually a helminthological paper but it has an obvious bearing on filariasis.] B.G.P.

(b) Mühlens has summarized his observations of the filarial diseases of man in America south of the United States.

He deals seriatim with " *Filaria* " *bancrofti*, *loa*, *perstans*, and *demarquayi* (*ozzardi*), *Dirofilaria magalhãesi*, *Dracunculus medinensis*, *Onchocerca volvulus* and *O. cæcutiens*, giving special attention to the last parasite in Mexico and its relationship to disturbances of the eye. B.G.P.

(c) For diagnosing ankylostome infections Hiller describes a clinical method in which the duodenum is percussed, and is found to be sensitive to pressure throughout its length in infected cases. The technique, which is described in some detail, obviates the necessity of finding either eggs or an eosinophilia. B.G.P.

(d) In an illustrated account of skin lesions due to human schistosome cercariæ, Vogel discusses cercarial dermatitis, cutaneous reactions, and granuloma of the vulva.

The skin rarely shows to the naked eye a reaction after cercarial penetration, though papule-formation was experimentally produced in a white man and sections of excised skin revealed neutrophile and eosinophile infiltration. An antigen, of intestinal gland of *Planorbis pfeifferi* infected with *S. mansoni*, confirmed the specificity of the cutaneous reaction described by Fairley & Williams, and showed its adaptability to African natives. The histology of a bilharzial granuloma vulvæ shows that adults are present as well as ova, and that ova migrate not only through the mucosa but also to some extent through the outer skin. B.G.P.

(e) Graubner treats hookworm cases with oil of chenopodium or its combination products, and finds 97 per cent. of patients cured.

About 66 per cent. of both children and adults are cured after a first treatment, and only very rarely is a third treatment required. Increased hæmoglobin and decreased eosinophilia follow this treatment even when *Trichuris* is also present (an infection which is not cured by this anthelmintic), hence the latter causes little or no eosinophilia. People returning from the tropics should be thoroughly examined. B.G.P.

106—Archives de l'Institut Pasteur d'Algérie.

a. VIALATTE, C.—" La bilharziose vésicale au Maroc. Le foyer d'Erfoud." x (2), 157-159. [June, 1932.]

(a) Vialatte reports the occurrence of vesical Bilharziasis in four Europeans who contracted the disease at Erfoud in Morocco. He states that previously Dr. Crozes had found 4.1 per cent. of the Mohammedan population there infected and had attributed this to bathing in the "séguia." The Europeans were infected apparently from bathing in the Ziz waters. R.T.L.

107—Australian Veterinary Journal.

a. ROSS, I. C.—" The administration of anthelmintics to sheep in licks and drinking water." VIII (3), 89-97, 1 table, 3 refs. [June, 1932.]

b. FINNEMORE, H.—" Note on the emulsification of Carbon tetrachloride and tetrachlorethylene." VIII (3), 97. [June, 1932.]

(a) Ross concludes that the daily administration in water or licks of various anthelmintic substances had no demonstrable effect in mitigating or lessening infection with *H. contortus* or *O. columbianum.*

The drugs used in the solution were potassium permanganate, carbon tetrachloride, tetrachlorethylene, " Kerol," " Caporit " and Borax : while those used in the phosphatic licks were sodium arsenite and copper sulphate, or copper sulphate alone. T.W.M.C.

(b) Finnemore finds that carbon tetrachloride or tetrachlorethylene may be prepared for administration to sheep in the form of an emulsion as follows :—

Commercial soft soap, 20 grammes ; Cresol, 6 ccm. ; Carbon tetrachloride or tetrachlorethylene, 50 ccm. ; Liquid paraffin, to 100 ccm.

The first two products are heated together until a jelly is formed, the drug is added and the mixture held until the jelly is dissolved and finally the paraffin is added. When this liquid is added to 500 times its volume of water a stable emulsion is produced. Its anthelmintic action has not been investigated. T.W.M.C.

108—Berliner Tierärztliche Wochenschrift.

a. STROH, G.—" *Cœnurus cerebralis* bei der Gemse." XLVIII (29), 465-466, 5 figs. [15th July, 1932.]

(a) Stroh describes in detail 5 cases of *Cœnurus cerebralis* in Chamois in Bavaria, all met with since 1926 in the course of hunting.

Photographs show the cysts isolated and *in situ*, and the scolices can be discerned in groups through the cyst wall. The cases showed various degrees of staggering, gyrating and imperfect sight. A single cyst occurred in 4 cases and three cysts in the 5th. B.G.P.

109—Boletim Biologico.

a. TRAVASSOS, L.—"Sobre dois parasitos do batraquios de Portugal." No. 21, 60-64, 6 figs., 4 refs. [June, 1932.]

(a) In a species of *Rana* from Portugal, Travassos has found *Cephalogonimus retusus* and *Capillaria costacruzi* n. sp., both of which are described and figured.

The fluke was imperfectly described by Dujardin in 1845 (under the name *Distoma retusum*) and redescribed as a new species (*C. europæus*) by Blaizot in 1910 : these authors' measurements are quoted. The nematode has a portion of the vagina everted, even in young forms. B.G.P.

110—Brasil Medico.

a. CRUZ, W. O.—"Hypothese sobre a pathogenia da anemia na ankylostomose. Papel preponderante da deficiencia de ferro no organismo." XLVI (27), 593-597. [2nd July, 1932.]

(a) Cruz discusses the pathology of hookworm anæmia. After a preliminary survey of the alternative toxic and hæmorrhagic theories he points out that some heavily parasitized carriers have no anæmia and that anæmia cases often show little improvement after removal of the worms. He states that the anæmia is in fact due to a disturbance of the normal iron metabolism and that severe cases quickly recover on large doses of iron even without anthelmintic treatment.

The histology of hæmatopoietic organs (in particular, femoral bone marrow) shows, in hookworm anæmia, hyperplasia with numerous eosinophiles and erythroblasts but the latter undergoing pycnosis (in malaria, on the other hand, the erythroblasts are rapidly replenishing the blood with red cells). The hæmatological findings, reduced red cells and hæmoglobin, and increased reticulocytes, are in accordance with this theory. B.G.P.

111—British Medical Journal.

a. MUIR, J. B. G.—"Removal of an ascaris from the common bile duct." No. 3727, 1077-1078, 1 fig., 10 refs. [11th June, 1932.]

b. BLACKLOCK, D. B.—"Parasitology in the medical curriculum." No. 3728, 1138-1139. [18th June, 1932.]

(a) Muir advises preliminary anthelmintic treatment prior to all abdominal operations in countries where, like China, individual infection with ascaris is heavy.

In reporting a case of ascaris invasion of the bile duct found during operation he quotes previous literature and recalls that Aviles (1918) had collected 90 similar records. He adds that invasion of the vermiform appendix is not uncommon. He has twice removed the appendix for acute symptoms and in so doing divided the body of an impacted worm. R.T.L.

(b) Blacklock gives reasons for his opinion that human Parasitology should be introduced earlier in the student's undergraduate training and that the diverse life-histories of the human parasites would stimulate the student's imagination and develop his powers of observation and reasoning and so give him a vital interest in the subject of Zoology. R.T.L.

112—Bulletin de l'Académie de Médecine.

a. ANGLADE, M. & GAUDIN, O.—" Au sujet de trois cas de parasitisme intestinal primitivement méconnu et guéri par les pyréthrines." CVII (26), 917-921. [5th July, 1932.]

(a) Three cases with different clinical manifestations of intestinal helminthiasis were cured by Anglade and Gaudin by a course of " Vermosol " a granular preparation of pyrethrum. In each case amelioration of the symptoms followed the passage of Oxyuris worms, the presence of which had not been previously suspected. R.T.L.

113—Bulletin. Council for Scientific and Industrial Research. Australia.

a. ROSS, I. C. & KAUZAL, G.—" The life cycle of *Stephanurus dentatus* Deising [Diesing], 1839 : the kidney worm of pigs with observations on its economic importance in Australia and suggestions for its control." No. 58, 80 pp., 20 figs., 17 refs. [1932.]

(a) Clunies Ross & Kauzal have described the life-history, control and economic importance in Australia of *Stephanurus dentatus* in pigs, in the light of investigations proceeding in the F. D. McMaster Animal Health Laboratory, under the joint auspices of the Council for Scientific and Industrial Research and the University of Sydney.

The parasite is common on the east coast, north of Sydney, but rare elsewhere. In places 70 per cent. of killed pigs are infected and carcasses are frequently condemned. Larvæ become infective in 4 or 5 days at 25° to 27° C. (optimum) and remain alive some 150 days in moist conditions—desiccation is fatal. Eggs and larvæ in water are quickly killed by 0.1 per cent. cyllin, kerol, copper sulphate, or mercuric chloride ; kerol is especially useful as a spray for muddy areas, but adequate drainage is preferable. The periodical drying (or spraying) of farrowing pens and stock-yards, and the segregation of parasitized stock are recommended.

Infection can occur orally, but experiments with a modification of Goodey's floating raft technique (using pig skin), and *in vivo* experiments with guinea-pigs, showed that the larvæ can penetrate the skin, where they remain about 7 days and undergo the 3rd ecdysis. They appear in the liver from 3 to 40 days after infection, undergo the 4th ecdysis there in about 2 months, and remain there about 6 months in all before migrating directly (by penetration) to the ureters, where oviposition begins. B.G.P.

114—Bulletin. Department of Agriculture, Dominion of Canada.

a. BRUCE, E. A.—" Internal parasites of poultry." No. 158, (new series), 12 pp., 2 figs. [1932.]

(a) Bruce briefly describes the more important parasitic diseases of poultry from the point of view of the poultry man.

The helminthic diseases include Tapeworms (in general), Ascaridia, Heterakis, Capillaria and the Gapeworm, and each is discussed under the headings of description, life history, symptoms, treatment and prevention. T.W.M.C.

115—Bulletin. Department of Game and Fisheries, Ontario.

a. LAW, R. G. & KENNEDY, A. H.—" Parasites of fur-bearing animals." No. 4, 30 pp., 17 figs. [1932.]

(a) Law & Kennedy describe and illustrate a number of parasites, mostly flukes, from fur-bearing animals in Ontario—mostly from mink and muskrats: they also list the helminths found in other animals.

While none of the parasites described here are new, several of them have only recently been described elsewhere:—notably, *Psilostomum ondatræ* (muskrat) *Parametorchis canadensis* (mink) and *Alaria mustelæ* (mink). T.W.M.C.

116—Bulletins de la Société de Pathologie Exotique.

a. MARCANDIER, M. & PIROT, R.—" Étude sur les ectoparasites des rats de Toulon." xxv (3), 237-244, 3 refs. [March, 1932.]

b. LAQUIÈZE, E.—" Les îles de la Loyauté: Pathologie, Urbanisme et Situation économique." xxv (6), 585-589. [June, 1932.]

c. LEGER, M. & QUEINNEC, P.—" Quelques mots sur un traitement de la filariose *Loa*." xxv (7), 690-694. [July, 1932.]

d. ROBERT, L.—" Un cas de bilharziose intestinale à *Schistosoma hæmatobium* chez un Européen." xxv (7,) 829-831. [July, 1932.]

(a) In this paper Marcandier & Pirot mention that the larvæ of *Protospirura muris* were found in 14 specimens of *Xenopsylla cheopis* collected from *Mus decumanus* which harboured the adults in their stomachs and, in association with these, adenomatous tumours were present. R.T.L.

(b) In this survey Laquièze found at Maré 9 cases of elephantiasis in men and 5 cases in women, whereas in 1911 Lebœuf only succeeded in finding 3 or 4 cases of elephantiasis in this island. R.T.L.

(c) A single case with calabar swellings of some years' duration was apparently successfully treated by intramuscular injections of " Synthol." In the discussion M. Broquet announced that he had found doses of tincture of iodine valuable in two cases. R.T.L.

(d) Robert reports the apparently successful use of intestinal lavage with oil of chenopodium in an intestinal case of *Schistosoma hæmatobium* contracted in French West Africa. R.T.L.

117—Comptes Rendus des Séances de l'Académie des Sciences.

a. DOGNON, A.—" Action biologique de rayons X monochromatiques de différentes longeurs d'onde sur l'œuf d'ascaris." CXCIV (26), 2336-2338. [27th June, 1932.]

b. DORIER, A.—" Sur la larve de *Parachordodes alpestris* (Villot)." CXCIV (26), 2340-2342. [27th June, 1932.]

c. AYNAUD, PEYRON & FALCHETTI.—" Sur le cancer du poumon chez le mouton et ses liens étiologiques avec les lésions parasitaires et infectieuses." CXCV (4), 342-344. [25th July, 1932.]

(a) Dognon has used the eggs of *Ascaris megalocephala* as material with which to test the lethal action of monochromatic X-rays of four distinct wave-lengths, viz. :—λ=2.28, 1.54, 1.1, and 0.7 Å.U. A comparison of the mortality curves shows that, at equal absorption energies, the lethal action decreases abruptly from the first long wave and then remains constant for the shorter waves. This anomaly is explained.

B.G.P.

(b) Dorier has described the larva of *Parachordodes alpestris* raised from eggs obtained, along with about 10 adults, from a spring in the vicinity of Grenoble. Despite the large numbers of Gordiacea described comparatively few are known at all well in their larval stages and the author compares his specimens with existing descriptions of *P. tolosanus*, *P. varius* and *Gordius aquaticus*. The last named is easily separable morphologically from the others as shown in a brief classification.

J.N.O.

(c) Aynaud *et al.* point out that tumours of the lung of the sheep have been inadequately studied, and comment on the evidence for malignant growth following lung-worm infections.

The epithelium of the sheep's lung shows a tendency to regeneration, and especially to tumour formation, more marked than in other animals. Parasites may produce cancer but there is no satisfactory explanation as to the rarity of the condition and the number of animals infested, or to the mode of action of the worms.

T.W.M.C.

118—Comptes Rendus des Séances de la Société de Biologie.

a. MORENAS, L.—" Utilisation du liquide de cycticerque (*Cysticercus tenuicollis*) comme antigène dans la réaction de Casoni." CX (19), 321-322, 1 ref. [3rd June, 1932.]

b. SIEVERS, H. K. & OYARZUN, R.—" Diagnostic de la distomatose hépatique par la réaction allergique." CX (22), 630-632. [27th June, 1932.]

c. GOULLIART, M.—" Les tubes génitaux d'un exemplaire d'*Ascaris megalocephala* hermaphrodite a 5 chromosomes." CX (25), 950-952. [19th July, 1932.]

d. COSTA, S. F. G. da.—" Action de quelques composés antimoniaux sur les Helminthes du porc et du chien." CX (26), 1054-1056, 2 refs. [25th July, 1932.]

e. EJSMONT, L.—" *Parafasciolopsis fasciolæmorpha* n.g., n.sp., Douve de l'Elan (*Alces alces*)." CX (27), 1087-1091, 1 fig. [29th July, 1932.]

f. THIRY, G. & DOMBRAY, P.—" *Ancylostoma duodenale* et *Strongyloides stercoralis* dans les mines de fer de la Lorraine." CX (27), 1159-1161. [29th July, 1932.]

g. GOULLIART, M.—" Le comportement de l'hétérochromosome dans la spermatogenèse et dans l'ovogenèse chez un *Ascaris megalocephala* hermaphrodite." CX (28), 1176-1179, 9 figs. [12th August, 1932.]

(a) Morenas, having previously shown (1929) that carriers of *Tænia saginata* display the Casoni (hydatid) intradermal reaction, here establishes the converse—that hydatid patients react typically to cysticercus fluid.

First the fluid, obtained from *Cysticercus tenuicollis* in sheep, was injected into a hydatid carrier, then some days later hydatid fluid was injected: typical positives resulted in each case. In another patient the two fluids were injected simultaneously, one in each arm, with quite comparable results. Thus the Casoni is a group reaction. B.G.P.

(b) Sievers & Oyarzun consider that the allergic reaction produced by extract of dried Fasciola is a useful diagnostic test.

The intensity of the reaction varies directly with the extent of infection. The antigens are soluble in ether and chloroform and intradermal injection presents no advantages over scarification. T.W.M.C.

(c) Goulliart describes an intersexual specimen of *Ascaris megalocephala* from the cytological aspect.

The worm was female in general structure, but the hermaphrodite character was cytologically revealed in each gonad where there were alternate zones of a male and female character. The worm had apparently been fertilized and contained ova in all stages up to the fully embryonated. B.G.P.

(d) Da Costa describes experiments to test the anthelmintic action of tartar emetic and other antimony compounds on ascarids from pig and dog.

In concentrations up to 1 per cent., tartar emetic is without effect on these worms *in vitro*, but given *per os* to a dog it removed 80 per cent. of the ascarids and had a paralysing effect upon them. Thus some activating change in the drug occurs in the alimentary canal. Similarly, organic antimony compounds (stibosan, neostibosan, antimosan and neoantimosan) are inactive until they have undergone some unknown change in the blood stream. Incidentally, antimony compounds are regarded as insufficiently effective against such worms as ascarids. B.G.P.

(e) Ejsmont has recovered a new fluke, *Parafasciolopsis fasciolaemorpha* n.g., n.sp., from the bile duct of an elk (*Alces alces*) captured near Zyrardon (Poland).

The fluke has a conical " head " and a spinous epidermis. The testes are markedly lobed and take the general form of a V and an inverted U respectively. The ovary is irregularly oval but not lobed. The vitellaria are mainly outside the cæca. It has particular resemblances to *Fasciola*, *Fasciolopsis*, *Odhneriella* and *Protofasciola* yet differs from all these. B.G.P.

(f) Thiry & Doubrey found by direct examination (and culture if necessary) that, of 878 miners from the iron mines of Lorraine, only 9 carried *Ancylostoma duodenale* and only 9 *Strongyloides stercoralis*. While the ore itself has been shown to be harmless to the ova and embryos, the general conditions in the mines are unfavourable to them. Thus the mines are drier and cooler than most coal mines and the miners do not work bare-footed and stripped. B.G.P.

(g) Goulliart here gives a cytological account of gametogenesis in the hermaphrodite *Ascaris megalocephala* which he described previously (see 118c above). B.G.P.

119—Deutsche Landwirtschaftliche Presse.

a. MOLZ, E.—" Die Bekämpfung der Rübennematoden mittels des Chlorkalk-Aktivierungsverfahrens." LIX (30), 371-372. [23rd July, 1932.]

(a) Molz describes the mode of action and the method of application of the chloride of lime activating process, as a method of controlling the beet-nematode, *Heterodera schachtii*.

To obtain the best results a sequence of control measures is recommended. Deep ploughing and applications of closet-dung, the latter not in direct contact with the cysts but at such a distance that the larvæ react to the odour without receiving the negative stimulus contributed by lack of oxygen, should precede the chloride of lime treatment. Hence early potatoes can advantageously be grown, as they require deep ploughing, can be manured with closet dung, are immune from infection, and are lifted early. Otherwise " enemy " plants may be used, *i.e.*, plants which stimulate the nematode to hatch without being susceptible to attack, *e.g.*, Chicory, Flax, Rye, Maize, etc., but these must be cleared from the ground early. Applications of chloride of lime (20 per cent.) at 8 cwt. per $\frac{1}{4}$ ha (5.4 sq. yds. approx.), or 8 cwt. chloride of lime mixed with 4 cwt. caustic lime per $\frac{1}{4}$ ha for soil with a lime deficiency, should be ploughed deeply into the soil. Immune plants should be grown the following year and weeds kept down. Since the effect of the chloride of lime, the hatching and attraction of the larvæ, can only take place in warm damp soil, the treatment should be applied during damp weather from mid-July to mid-August. M.J.T.

120—Deutsche Tierärztliche Wochenschrift.

a. BRÜLL, H.—" Eine Capillaria im Pharynx und Oesophagus eines Wanderfalken." XL (19), 293-294, 2 figs., 1 ref. [7th May, 1932.]

b. OLT.—" Das Aneurysma verminosum des Pferdes und seine unbekannten Beziehungen zur Kolik." XL (21), 326-332, 3 figs., 24 refs. [21st May, 1932.]

c. OPPERMANN, T. & BEHRENS, R.—" Behandlung der Magenwurmseuche (Hæmonchosis) der Schafe mit Lentin-Merck." XL (24), 369-372, 6 refs. [11th June, 1932.]

d. SPREHN, C.—" Hygienische Massnahmen zur Verhinderung parasitären Krankheiten der Pelztiere." [1. Sitzung des Sachverständigen-Ausschusses für Pelztierzucht, 1931.] XL (26), 410-411. [25th June, 1932.]

e. SPREHN, C.—" Zur Spulwurmkrankheit der Füchse." [1. Sitzung des Sachverständigen-Ausschusses für Pelztierzucht, 1931.] XL (26), 411. [25th June, 1932.]

(a) Brüll describes, in the tongue, throat and œsophagus of a falcon, a swollen condition with partial destruction of the mucosa due to the presence of *Capillaria dispar*. B.G.P.

(b) Olt describes the life-cycle of a common horse strongyle, *Strongylus vulgaris*, and discusses in detail the production of verminous aneurysms (by the larvæ) and their relation to colic.

The eggs hatch within two days and after about 30 hours the first moult occurs. A week later the larvæ are in the ensheathed, resistant, infective stage. After infection *per os* the larvæ penetrate the wall of the colon and migrate through the blood vessels *via* portal system, right heart, lungs, trachea, are swallowed again and become adult in the colon. Some larvæ are side-tracked into the mesenteric arteries where they cause the formation of a thrombus and consequent aneurysm. In the thrombus the larvæ may grow from 2 mm. to 20 mm. in length. Emboli frequently result, and there is hypertrophy of connective tissue and chronic inflammation in the region of the aneurysm. Destruction of the local nerve trunks results from pressure atrophy and inflammation, and Olt ascribes the characteristic colicky symptoms rather to these nerve lesions than to emboli. Therapy with copper salts is almost useless against the adults. B.G.P.

(c) Oppermann & Behrens have tested a proprietary anthelmintic called " Lentin " in cases of Hæmonchosis in sheep.

This drug apparently causes an increased secretion of the gastric glands and an increase in peristalsis ; and it is stated to have a specific action on the parasympathetic system. Administered subcutaneously dissolved in water, Lentin is excreted by the gastric mucosa. It kills as well as expels the worms, as tested on a number of sheep, adequately controlled. 0.5 mg. is given subcutaneously in the morning, after fasting overnight, with a second dose 8 to 10 hours later, food being withheld until an hour after this. If the sheep show lung symptoms 5.0 gm. in water is given twice by mouth under similar conditions. The appetite appears not to be disturbed. T.W.M.C.

(d) At this Conference of breeders of fur animals, which took place in 1931, Sprehn discussed the various ways in which fur-bearing animals acquire helminthic infections. Thus for foxes infected with *Uncinaria stenocephala* the floor of the enclosure is a source of infection; again, mink, which are usually kept on a wire floor, acquire trematode infections from eating frogs. A 1:1,000 solution of Viscojod makes a good disinfectant. B.G.P.

(e) In a second paper read at the same Conference as the above, Sprehn dealt in detail with the control of ascariasis in foxes.

The eggs of *Toxocara canis* are laid intermittently so cannot always be found in the fæces. Even immature females lay viable eggs, so that coition must occur at an early stage. Conditions in the breeding boxes are favourable for the development of the eggs and infections are often heavy. The method of "therapeutic prophylaxis," starting as early in life as possible, is recommended. B.G.P.

121—Ecology.

a. PEARSE, A. S.—"Parasites of the Japanese salamanders." XIII (2), 135-152, 7 tables, 19 refs. [1932.]

(a) Pearse has studied the habits, food and parasites of eight species of salamanders found in Japan.

His observations do not reveal striking differences between the parasites of aquatic and terrestrial salamanders, but significant correlations occurred between body-size and foods, parasitic infestation and other environmental conditions. In some parasites there was seasonal variation in numbers. R.T.L.

122—Gardeners' Chronicle.

a. ANON.—"Phloxes and Eelworm." [Correspondence.] XCI (2368), 373. [1932.]

(a) An infection of *Tylenchus dipsaci* on Phloxes has been diagnosed. It is advised that the attacked plants be burned, and any other phloxes grown some distance from the infected area. Root cuttings taken from infected stocks should be thoroughly washed and grown in clean soil. Mulches of leaf soil in early spring are advised to check nematode attack. M.J.T.

123—Gazette Hebdomadaire des Sciences Médicales de Bordeaux.

a. GINESTOUS, E.—"Filaire de la conjonctive." LIII (21), 326. [22nd May 1932.]

(a) Ginestous reports the intermittent presence of a foreign body under the conjunctiva of a patient recently returned from the Congo suffering from filariasis. The body, probably a Loa, was not seen. B.G.P.

124—Gazzetta degli Ospedali e delle Cliniche.

a. GRUBER, G. B.—"Peritonitis da ascaridi." LIII, 103-105. [1932.]

(a) In a discussion on peritonitis due to ascarids Gruber concludes that these worms can traverse the intact (unulcerated) wall of the intestine. B.G.P.

125—Geneeskundig Tijdschrift voor Nederlandsch-Indië.

a. THIEL, P. H. VAN, & WOLFF, A. E.—"Een vergelijking der chemische methoden tot het scheiden van de larven der mijnwormen van mensch en dier van die der vrijlevende nematoden." LXXII (13), 836-841, 4 refs. [21st June, 1932.]

b. JURGENS, A. L.—"De overbrenging van *Filaria malayi* in de onderafdeeling Mamoedjoe." LXXII (15), 953-959, 5 refs. [19th July, 1932.]

c. BERGMAN, R. A. M.—"Microfilariën in bloedculturen." LXXII (15), 973-981, 29 refs. [19th July, 1932.]

(a) Van Thiel & Wolff compare the Cort and Baermann methods of distinguishing infective hookworm larvæ from free-living nematodes. In addition to Fülleborn's thermotactic method (whereby hookworm larvæ are attracted by warm water and penetrate through paper impregnated with agar) there are two chemical methods. That of Baermann (1917), using 1 part of 7.5 per cent. caustic potash to 5 parts infested water (all but sheathed larvæ being killed) is preferable for bulky material; and that of Cort (1925), using 1 part of commercial formalin (40 per cent. formaldehyde) in 5 or 25 parts of water, is more precise when the material is scanty and can therefore be examined rapidly. Neither method entirely obviates the necessity of morphological differentiation. B.G.P.

(b) Jurgens finds that in the sub-district of Mamoedjoe (west coast of Celebes) *Filaria malayi* is carried principally by *Anopheles barbirostris*. The experimental infection index for *A. barbirostris* was 83 per cent. and the natural index 8.9 per cent., which is sufficient to account for the human) filarial index of 37 per cent. notwithstanding the relative scarcity of this mosquito as compared with *Taeniorhynchus annulipes*. Plentiful *Aedes* (*aedes*) sp. could not be infected experimentally. B.G.P.

(c) By carefully centrifuging the blood of a filariasis patient Bergman was able to separate a thin layer of deposit, containing mostly leucocytes and microfilariæ (*F. malayi*), which was cultured in the patient's serum (sterile). The microfilariæ were slowly destroyed and absorbed by the leucocytes, leaving only the sheath; and (apparently as a result of this absorption) the lymphocytic leucocytes were transformed into eosinophiles. [The process is described and illustrated in detail.] B.G.P.

126—Geneeskundig Tijdschrift voor Nederlandsch-Indië. Bijblad.

a. TISSOT VAN PATOT, P. N.—" Vergelijkend overzicht van den gezondheidstoestand in het Nederl.-Indische Leger over 1930 en de laatste tien tot vijfentwintig voorafhaande jaren." Bijblad No. 3, 55 pp. [June, 1932.]

(a) Van Patot, in the course of a comparative survey of the health of the Dutch East Indian Army for 1930 and the preceding 10-25 years, deals in one section with Filariasis.

For this disease data are available only since 1923, and during the 8 years there have been only 8 cases among European soldiers (0.12 per cent. per annum) and 14 among Natives (0.06 per cent. p.a.). Most cases showed no clinical symptoms. The higher rate in Europeans is probably due to their having acquired infection whilst on service in the West Indies where filariasis is more common. B.G.P

127—Indian Journal of Medical Research.

a. RAO, S. S. & IYENGAR, M. O. T.—" Experimental infection of some Indian mosquitoes with *Wuchereria* (*Filaria*) *bancrofti*." XX (1), 25-34, 1 table, 4 refs. [July, 1932.]

b. KORKE, V. T.—" Observations on filariasis in some areas in British India.' Part VIII. XX (1), 335-339, 14 refs. [July, 1932.]

(a) Various species of Indian mosquitoes have been tested experimentally by Rao & Iyengar as intermediate hosts of *Filaria bancrofti*. *Culex fatigans*, *Anopheles philippinensis*, *A. ludlowii* var. *Sundaica*, *A. pallidus*, *A. fuliginosus* and *A. stephensi* were efficient and larval development proceeded rapidly. Natural infections were observed in the first three species. *Aedes* (*Stegomyia*) *ægypti* seldom took on infection and where this did occur the development was arrested in the very early stages. *Armigeres obturbans* and *Aedes* (*Stegomyia*) *vittatus* were quite refractory. In *A. hyrcanus* var. *nigerrimus* and *A. barbirostris* a large proportion of the larvæ failed to reach maturity. R.T.L.

(b) Korke has studied the incidence of filariasis in correlation with physiography and physical characters in the Punjab during the months of October and November, 1931.

A thousand males chiefly from institutions and schools were examined between the hours of 7 and 10 p.m. but no filaria embryos were found. *Culex fatigans* is one of the commonest mosquitoes in the Punjab. The most noticeable differences between the Punjab, Bihar and Orissa where filariasis is endemic are in the level of the land and the staple crops. In the former wheat is the chief crop, whereas in the latter it is rice.

R.T.L.

128—Journal of the American Medical Association.

a. WALKER, A. T.—" Trichiniasis : Report of an outbreak caused by trichinous bear meat in the form of ' Jerky.' " XCVIII (24), 2051-2053. [11th June, 1932.]

b. FAUST, E. C.—" The symptomatology, diagnosis and treatment of Strongyloides infection." XCVIII (26), 2276-2277. [25th June, 1932.]

c. LAMSON, P. D., BROWN, H. W. & WARD, C. B.—" Anthelmintics: some therapeutic and practical considerations on their use." XCIX (4), 292-295. [23rd July, 1932.]

d. BUTSCH, W. L.—" Cirrhosis of the liver caused by Carbon tetrachloride." XCIX (9), 728-729. [27th August, 1932.]

(a) Walker records an outbreak of Trichiniasis in a family of 5 (with one death) in which dried bear flesh was the source of infection.

The heavily infected flesh was so dry that it had to be soaked for 12 hours before sections could be made; the strips of meat were about 18 ins. long, 2 ins. wide, and ½ in. thick. Probably about 50 persons partook of this meat. The larvæ were recovered from the diaphragm and pectorals of the patient at the necropsy. T.W.M.C.

(b) Strongyloides infection is relatively frequent in the Southern part of the United States. Faust gives a general account of the subject with a summary of recent work on thereapeutics.

In severe cases there is extensive erosion of considerable areas of the pyloric, jejunal and iliac mucous membrane, and this may also occur in the large intestine. In slight cases diarrhœa alternates with constipation, and there is epigastric pain. Two half-grain tablets of enteric coated tablets of Gentian violet three times daily for seven to ten days often effects a cure R.T.L.

(c) Lamson, Brown & Ward state that the drugs available for hookworm treatment at present are thymol, betanaphthol, ol. chenopodium, ascaridole, carbon tetrachloride, tetrachlorethylene and hexylresorcinol; and for ascaris, santonin, ol. chenopodium and hexylresorcinol.

All are toxic and, although the human death rate is very low, cases of severe intoxication are more common. They discuss especially the following drugs.

TETRACHLORETHYLENE (Hall, 1921) may produce a central necrosis of the liver with an accumulation of guanidine in the blood. No deaths have been reported from tetrachlorethylene and no change could be produced in the liver of experimental animals with it. It is very valuable for uncomplicated hookworm disease but is ineffective against ascaris.

FICIN. The sap of the fig tree has been used for ages in South America, and its active principle is a proteolytic anzyme which digests the parasites. It removes ascaris, 80 per cent. whipworms and is non-irritating and non-toxic—if no alimentary lesion is present.

HEXYLRESORCINOL will remove 90–95 per cent. ascaris, 80–85 per cent. hookworms and 40–50 per cent. whipworms in a single dose and it may also be effective against tapeworms. 30 per cent. of the drug taken by mouth is absorbed by the intestine and excreted in the urine but it never causes an intoxication, possibly because of its low solubility. It is relatively ineffective, however, if taken when food is present in the intestine and it has a local irritating action, which, however, seems to be slight. It is

best given as a sugar-coated pill and should only be given under supervision as, if chewed, it burns the mouth (this quickly heals, however, without complication). It is anthelmintic against ascaris (90 per cent.) and very good against hookworm.

6-N-HEXYL-META-CRESOL is a liquid which reacts less with proteins than the last and is less irritating to the mouth and stomach of man. It is no more toxic to animals but is not yet advocated for man. It appears to have a similar activity towards the parasite. T.W.M.C.

(d) Butsch thinks that the possible danger of cirrhosis of the liver following carbon tetrachloride inhalation during its use as a solvent in dry cleaning, etc., has been overlooked. R.T.L.

129—Journal of the American Veterinary Medical Association.

a. ANON.—" Airplane used in fluke control." LXXX (1), 119-120. [January, 1932.]
b. REBRASSIER, R. E.—" The anthelmintic value of Kamala for tapeworms in chickens." LXXX (6), 895-903, 4 tables, 12 refs. [June, 1932.]
c. SIMMS, B. T., McCAPES, A. M. & MUTH, O. H.—" Salmon poisoning: Transmission and immunization experiments." LXXXI (1), 26-36, 3 tables, 7 refs. [July, 1932.]
d. SHAW, J. N.—" Studies of the liver fluke (*Fasciola hepatica*)." LXXXI (1), 76-82, 2 figs., 1 table, 5 refs. [July, 1932.]
e. OLSON, C.—" Two cases of infestation of the dog with *Dioctophyme renale*." LXXXI (2), 252-255, 3 figs., 1 ref. [August, 1932.]

(a) In the Sierra Valleys of California, copper sulphate was broadcast by aeroplane over wet, lush pastures with satisfactory results.

In 1928, 300,000 doses of carbon tetrachloride were administered to sheep. T.W.M.C.

(b) Rebrassier discusses the various drugs in use against tapeworm in chickens.

He administered powdered Kamala—with under 5 per cent. ash—in doses of 7.5, 10 and 15 gr., to chickens and found that the latter dose completely eliminated all the tapeworms in three birds. In all other cases (of which 43 were positive), worms were found on autopsy. The tapeworms were *D. proglottina*, *C. infundibulum*, *R. cesticillus* and *H. carioca*. T.W.M.C.

(c) Simms, McCapes & Muth find that " Salmon poisoning " in Oregon can be produced by the intraperitoneal injection of encysted cercariæ of the salmon-poisoning fluke, obtained from parasitized fish, and can be transmitted from sick to susceptible dogs by blood injections. The causal agent, apparently carried by the fluke, is still obscure. Dogs have been immunised by the simultaneous injection of virulent and hyperimmune blood. T.W.M.C.

(d) Shaw, infecting snails with *Fasciola hepatica* on the 22nd November, 1930, found that they began discharging cercariæ on the 15th February, 1931, and continued to do so until the 20th April, 1931. The cercariæ remained alive for 11 months. Encysted cercariæ were destroyed by a 1 in 500 solution of copper sulphate. His experimental work confirms the belief that the cercariæ travel to the liver via the peritoneal cavity. T.W.M.C.

(e) Olsen observed two indigenous cases of infection in dogs with *Dioctophyme renale*.

In one case three worms were found, causing little (if any) clinical disturbance. In the other a single female was recovered from the peritoneal cavity of the dog after its sudden death. It had apparently escaped from the bladder. T.W.M.C.

130—Journal of the British Goat Society.

a. OAT, W. G.—" Parasites in goats." XXV (5), 123-124. [May, 1932]. XXV (6), 154. [June, 1932.]

(a) In this popular account of helminthiasis of the goat, Oat reminds readers that general loss of condition is probably attributable to helminth infections and affects the milk yield.

The use of copper sulphate and of santonin in 3 grain doses is advocated after a fast of not less than 14 hours. The treatment is to be repeated every eight days " until the improved condition denotes that a cure has been effected." R.T.L.

131—Journal of Comparative Pathology and Therapeutics.

a. CARNE, H. R. & ROSS, I. C.—" The association of the bacillus of Preisz-Nocard with lesions caused by *Oesophagostomum columbianum* in sheep." XLV, pp. 150-157, 1 table. [June, 1932.]

(a) Carne and Ross simultaneously infected five lambs with the Preisz-Nocard bacillus and larvæ of *O. columbianum ;* in only one case did a bacterial infection develop.

They believe that injuries to the intestinal wall caused by intestinal parasites are not a common portal of entry of the organism under natural conditions. T.W.M.C.

132—Journal of the Council for Scientific and Industrial Research.

a. ROSS, I. C.—" Observations on the resistance of sheep to infestation by the stomach worm (*Hæmonchus contortus*)." V (2), 73-80, 9 refs. [May, 1932.]

(a) Ross considers that the degree of resistance to infestation with Hæmonchus is influenced by a complex of forces of the individual importance of which we are not yet aware.

Among those forces may be natural resistance, age, acquired immunity and nutritional factors. He believes that acquired resistance, if produced, must be of short duration. Old animals may be heavily parasitized without exhibiting any effects. T.W.M.C.

133—Journal of Helminthology.

a. MORGAN, D. O.—" An experimental infection of the rabbit with *Capillaria hepatica* (Bancroft, 1893.)." x (2/3), 65-66, 3 refs. [June, 1932.]

b. SOLOMON, S. G.—" On the experimental development of *Bothridium* (=*Solenophorus*) *pythonis* de Blainville, 1824, in *Cyclops viridis* Jurine, 1820." x (2/3), 67-74, 8 figs., 7 refs. [June, 1932.]

c. GOODEY, T.—" The genus *Anguillulina* Gerv. & v. Ben., 1859 vel *Tylenchus* Bastian, 1865." x (2/3), 75-180, 117 figs. [June, 1932.]

d. TRIFFITT, M. J.—" Preliminary note on the use of root excretions as a method of controlling the nematode *Heterodera schachtii*." x (2/3), 181-182. [June, 1932.]

(a) Morgan has succeeded in infecting two five-weeks old rabbits with embryonated eggs of *Capillaria hepatica* from a rat's liver.

Both rabbits died in about 30 days owing to liver damage caused by the worms. Comparative measurements, especially of the spicules, suggest that more than one species has been included under this name. B.G.P.

(b) Solomon describes and figures the development of *Bothridium pythonis* to the procercoid stage from ova obtained from adults in *Python molurus*.

This is the first account of development in a *Bothridium* sp. The eggs hatch in 1 to 3 days, according to temperature, and the coracidia readily infect *Cyclops viridis* which can support as many as 15 growing procercoids. The latter develops an elongated cercomer within 14 days but by the 20th day this is constricted off. The morphology and biology of each stage, and affinities with corresponding stages in related forms, are discussed. B.G.P.

(c) Goodey gives brief descriptions of all the species of the genus *Anguillulina* (=*Tylenchus*), both free living and parasitic.

The morphology of each species is briefly described and lists of synonyms are given. In addition, the life history, hosts and distribution of the parasitic species are also mentioned, and the occurrence and relationships of the free-living species are briefly dealt with. *Species inquirendae* and *nomina nuda* are reviewed and an alphabetical list of *Tylenchus* species is given with particulars as to the present status of each species. The morphological characters described are illustrated by numerous text figures, and an extensive bibliography is given.

M.J.T.

(d) Triffitt describes the first year's result of a field experiment where grasses immune to eelworm attack were used as a rotation crop.

The root excretions of the grasses had been found to stimulate the larvæ to hatch from the cysts, and by dissections and egg counts it was found that the number of full cysts was reduced by over 20 per cent. at the close of the first year of the field experiment. M.J.T.

134—Journal of Parasitology.

a. LLOYD, L. C. & GUBERLET, J. E.—" A new genus and species of Monorchidæ." XVIII (4), 232-239, 1 pl., 12 refs. [June, 1932.]

b. FOSTER, A. O. & DAENGSVANG, S.—" Viability and rate of development of the eggs and larvæ of the two physiological strains of the dog hookworm, *Ancylostoma caninum*." XVIII (4), 245-251, 3 tables, 9 refs. [June, 1932.]

c. WITENBERG, G.—" On the anatomy and systematic position of the causative agent of so-called salmon poisoning." XVIII (4), 258-263, 2 figs., 16 refs. [June, 1932.]

d. AMEEL, D. J.—" Life history of the North American lung fluke of mammals." XVIII (4), 264-268, 2 figs., 4 refs. [June, 1932.]

e. OTTO, G. F.—" The appearance and significance of the unfertilized eggs of *Ascaris lumbricoides* (Linn.)." XVIII (4), 269-273, 1 pl., 1 table, 7 refs. [June, 1932.]

f. WALTON, A. C.—" *Physaloptera polydentata*, n. sp." XVIII (4), 288-290, 3 figs., 1 ref. [June, 1932.]

g. ESSEX, H. E.—" A new larval cestode, probably *Hymenolepis cuneata*, a tapeworm of a wild duck." XVIII (4), 291-293, 3 figs., 4 refs. [June, 1932.]

h. KREIS, H. A.—" A new pathogenic nematode of the family Oxyuroidea, *Oxyuronema atelophora* n.g., n. sp. in the red-spider monkey, *Ateles geoffroyi*." XVIII (4), 295-302, 2 pls., 3 refs. [June, 1932.]

(a) Lloyd & Guberlet find that nearly 100 per cent. of the common viviparous perch or " shiner " *Cymatogaster aggregatus* of Puget Sound harbour a new trematode of the small family *Monorchidæ* named *Telolecithus pugetensis* n.g., n. sp.

It differs from all previously described genera of *Proctotreminæ* in the more posterior position of the yolk glands which lie in the posterior third of the body. The authors also discuss the systematic position of the genus *Genolopa* Linton which Odhner transferred to *Monorchidæ* from *Siphoderidæ*. R.T.L.

(b) Using McCoy's method of growing hookworm larvæ in pure cultures of bacteria Foster & Daengsvang have studied the percentage of hatching and development, at different temperatures, of the physiological strains of *A. caninum* which occur respectively in the dog and the cat, and have shewn that in their experiments the two strains differ somewhat. R.T.L.

(c) Witenberg has re-examined American material of *Nanophyetus salmincola* and finds that *N. schikhobalowi* described from Eastern Siberia is identical with it. He does not accept the view that the genus *Nanophyetus* belongs to the family *Heterophyidæ* but places it in *Troglotremidæ* as a synonym of *Troglotrema*. A differential table is given of the two species *T. acutum* and *T. salmincola*. Probably *Macrorchis spinulosus* Goto, in Aado, 1919 should also be placed in this genus. R.T.L.

(d) In snails of the species *Pomatiopsis lapidaria* collected near Ann Arbor, Ameel has found the developmental stages of a Paragonimus. The cercaria develops in a Redia but differs, notably in the character of the pharynx and the penetration glands and their ducts, from the descriptions of the cercaria of Asiatic forms given by Kobayashi and Faust. In the second intermediaries *Cambarus propinquus*, *C. robustus*, *C. virilis*, *C. diogenes* and *C. rusticus* the encysted cercariæ never occur in the gills or body muscles but always in the heart tissue. The mink is the true definitive host although dogs, cats and swine have been found infected. Racoons seem immune. Those metacaercariæ which have not reached the lung but have remained in the abdominal and pleural cavities of rats and mice for one or two months are infective to cats. R.T.L.

(e) Otto draws attention to the frequency of unfertilized eggs of *Ascaris lumbricoides* in the fæces of man and illustrates 9 different types of asymmetry. A single female may produce both fertile and infertile eggs at the same time. R.T.L.

(f) Walton describes a new species of *Physaloptera* from a gecko *Hemidectylus mabouia* in Tanganyika. *P. polydentata* n. sp. resembles most closely *P. quadrovaria* from which it differs in that the primary divisions of the oviduct are of considerable length. It also possesses dentigerous ridges, an uncommon condition among the tetradelphoid members of the genus. R.T.L.

(g) Essex figures a procercoid found in the body cavity of *Diaptomus oregonensis* from Long Lake, Ely, Minnesota which from the character of the hooks is probably the larval stage of a *Hymenolepis*, probably *H. cuneata* of ducks. R.T.L.

(h) Fatal intestinal hæmorrhages in a red-spider monkey *Ateles geoffroyi* from Panama are attributed to the presence in the large bowel of hundreds of specimens of a new nematode named *Oxyuronema atelophora* n.g., n. sp. The new form is differentiated from various species of Enterobius and differs notably in that the annules of the skin appear as dotted lines. There is a distinct anterior œsophageal tube. The female possesses only one ovarian tubule. R.T.L.

135—Journal of Pharmacology and Experimental Therapeutics.

a. CUTLER, J. T.—" The influence of diet on carbon tetrachloride intoxication in dogs." XLV (2), 209-226, 5 tables, 24 refs. [June, 1932.]

(a) After reviewing the literature on the influence of diet on phosphorus, chloroform and carbon tetrachloride poisoning Jessie T. Cutler reports on a series of experiments on dogs to which carbon tetrachloride had been administered.

The significant chemical changes in the blood are an increase in guanidine and a severe and often fatal hypoglycaemia. The symptoms of intoxication and the hypoglycaemia are secondary to the guanidine increase. None

of the various diet tests protect the liver from destruction but those diets which do not tend to increase guanidine and are rich in calcium and in carbohydrates, have given a high resistance to carbon tetrachloride with the least symptoms of intoxication and the lowest death rates. R.T.L.

136—Journal of the South African Veterinary Medical Association.

a. ORTLEPP, R. J.—"Two new ascarids from crocodiles." III (2), 70-75, 9 figs., 7 refs. [June, 1932.]

(a) Ortlepp has found, in a collection of roundworms from a crocodile shot in Southern Rhodesia, immature specimens of *Dujardinia helicina* and a new species, *D. tasmani*, named after the collector; while from a Central African crocodile a new species named *Porrocæcum assymmetricum* was obtained in association with *Multicæcum agile*. It differs from *P. crocodili* in the shape of the dorsal lip, the position of the vulva and the shape and size of the tail. R.T.L.

137—Journal of Tropical Medicine and Hygiene.

a. ARCHIBALD, R. G. & MARSHALL, A.—"A descriptive study of the cercaria of *S. hæmatobium* in the Sudan." XXXV (15), 225-228. [August, 1932.]

(a) The cercaria of *Schistosoma hæmatobium* is described by Archibald and Marshall from material obtained from laboratory bred and experimentally infected *Bulinus truncatus* in the Sudan. The penetration or secretory glands always numbered three pairs. Attempts to infect *Physopsis africana* were consistently negative. R.T.L.

138—Journal of Urology.

a. CULVER, H. & HOEPPNER, W. F.—"Vesical bilharziasis." XXVII (2), 189-200. [February, 1932.]

(a) Twenty-five cases of Bilharziasis are recorded for the United States but like the case described by the Authors all were acquired before entering the States. R.T.L.

139—Journal of the Washington Academy of Sciences.

a. ALICATA, J. E.—"A new trematode *Acanthatrium eptesici* from the brown bat." XXII (10), 271-274, 3 figs., 3 refs. [1932.]

(a) A third species is described by Alicata for the trematode genus *Acanthatrium*.

A. eptesici n. sp., differs from *A. sphærula* (Looss 1896) in that the ovary is ovoid whereas in the latter it is triangular and deeply lobed. From *A. nycteridis* it differs in that this species has three separate groups of spines in the genital atrium while in the new species there is a single group of long narrow spines. Some modification in the generic description of *Acanthatrium* is proposed. R.T.L.

140—Klinische Wochenschrift.

a. HEDRICH, W.—" Über einen Fall von seltener Darmparasitenerkrankung (*Anguillula intestinalis*) bei einem Bergarbeiter des Zwickauer Reviers." XI (20), 866-867, 9 refs. [14th May, 1932.]

(a) Hedrich gives clinical details of a case of anguillulosis, in a Zwickau miner, in which cultures produced the free-living generation of *Strongyloides stercoralis* characteristic of tropical infections. General health was poor and there was an eosinophilia of about 60 per cent. (leucocytes : 18,000). Neo-Salvarsan and Gentian Violet were employed with satisfactory results. B.G.P.

141—Lancet.

a. LOW, G. C. & FRANKLIN, R. H.—" New antimony preparations in treatment of Mediterranean leishmaniasis and Japanese (or eastern) schistosomiasis." CCXXII (5660), 395-396. [26th February, 1932.]

b. LANE, C.—" Extra-corporeal development of hookworms." CCXXII (5666), 741-745, 2 figs., 11 refs. [2nd April, 1932.]

(a) A case of *Schistosoma japonicum*, in an Englishman, was successfully treated by intramuscular injections of neo-antimosan. Ten injections were given in 13 days ; 8 doses of 5 c.cm. were given after two initial doses of 1.5 c.cm. and 3.5 c.cm. R.T.L.

(b) Lane believes that the use of untrapped cultures has led recently to many erroneous conclusions concerning the migrations of hookworm larvæ in the soil. He describes a larval trap of high efficiency and a new method of extracting larvæ which is as reliable as that of Baermann.

Hookworm larvæ develop best when the water content of the soil is as low as 25 per cent. More than half the eggs develop to the infective stage even when this is only 9 per cent. and the culture medium (consisting of 4 parts of earth and 1 of fæces) is powdery, and the larvæ may be so vigorous as to constitute in a similar soil a centre of intense infectivity. Drought need not therefore lessen the infectivity of defæcation sites among backward races. R.T.L.

142—Marseille Medical.

a. HECKENROTH & GUILLINY.—" Sur un cas d'infestation double par *Fasciola hepatica* et *Schistosomum mansoni* chez un indigène de la Côte française des Somalis." LXIX (18), 817-821. [25th June, 1932.]

(a) Heckenroth & Guilliny detail the case of a native of Somaliland who had travelled direct to France and was subsequently found to be infected with *Fasciola hepatica*. Direct fæcal examination revealed only eggs of tricocephalus, but after concentration eggs of fasciola and also of *Schistosoma mansoni* were found. The Casoni reaction with hydatid fluid was positive (as Bacigalupo also found in two *F. hepatica* cases). This is the second case of *S. mansoni* from the French Somali coast.

B.G.P.

143—Medicina de los Países Cálidos.

a. LOPEZ-NEYRA, C. R. & POZO, D. G.—" Asociación del *Schistosoma hæmatobium* y *mansoni*, en un caso de hematuria observado en España." v (4), 257-260. [July, 1932.]

b. HILL, R. B. & ASTUDILLO, J. N.—" Los parasitos intestinales del hombre en Campo Lugar (Cáceres)." v (4), 261-268. [July, 1932.]

c. NAJERA, L.—" Tecnica nueva para la numeracion de los huevos de helmintos en las heces, por medio de la camara de Zschucke." v (4), 318-321. [July, 1932.]

(a) Lopez-Neyra & Pozo have re-examined the material from a case of vesical bilharziasis described by Covisa in 1922 from a baker, a native of Lorca (Murcia), who had lived 7 years in the Argentine. They have found that *Schistosoma mansoni* eggs are also present in small numbers in the urinary sediment.

Vesical infections with *S. mansoni* have been reported several times from Africa, but there is only one trustworthy case from America, and the authors therefore suggest that the present infection was autochthonous, the Lorca focus probably originating from local workmen who had returned from temporary employment in north Africa. As in the Portuguese foci, there are at Lorca thermal springs (much used for laundry purposes) in which live molluscs of the genera *Physa*, *Melanopsis* and *Planorbis*.

B.G.P.

(b) Hill & Astudillo have examined 130 children, from a village (Campo Lugar) in Cáceres, for helminths and protozoa.

As regards helminths the following cases were met with (based on eggs concentrated by the Willis flotation method): *Hymenolepis nana*, 23; *Ascaris lumbricoides*, 5; *Enterobius vermicularis*, 2; *and Tænia saginata*, 1. The scarcity of nematodes is probably due rather to the warm dry climate than to sanitation, which is poor. The data are tabulated under sex, and age.

B.G.P.

(c) Najera describes a modification of the Stoll egg-counting technique, in which the fæces are measured by volume and shaken up with beads in a N/10 sodium carbonate solution, while the emulsion is examined in a calibrated counting cell. Correction-factors for consistency of stool are given. Neither balance nor mechanical stage is needed, and one obviates the concentration of eggs round the lateral meniscus under the cover glass—a phenomenon which sometimes renders a Stoll count difficult.

B.G.P.

144—Münchener Medizinische Wochenschrift.

a. HILLENBRAND, K.—" Schwerhörigkeit nach Chenopodiumölvergiftung." LXXIX (29), 1152-1153. [15th July, 1932.]

(a) Hillenbrand cites the case of a woman of 56 who developed deafness as a result of excessive doses of oil of chenopodium given as an anthelmintic. Excessive doses should be avoided, and (in view of its cumulative effect) the drug should not be repeatedly given at short intervals. B.G.P.

145—Münchener Tierärztliche Wochenschrift.

a. LEEB, F. & BERNGRUBER, R.—" Der Stand der Rinderfinne in Bayern." LXXXIII (5), 49-54, 3 tables, 1 graph, 16 refs. [3rd February, 1932.]

(a) Leeb & Berngruber have surveyed the incidence of bovine cysticercosis in Bavaria and make recommendations for its better control.

In Würzburg, during 1931, 1·906 per cent. of slaughtered bovines were measled; and there is evidence that not only is the condition widely spread throughout the state, but that it is increasing. Meat inspectors must have more legal authority and the co-operation of the agricultural community must be obtained as *all* animals slaughtered should be inspected. It is suggested that uninspected meat should be listed as such (as is done in the case of pork measles), as giving no guarantee of freedom from cysticercosis. T.W.M.C.

146—Nederlandsch Tijdschrift voor Geneeskunde.

a. LANGEN, C. D. de.—" Verschijnselen aan hart en bloedvaten bij de mijnwormziekte." LXXVI (1), 13-18. [January, 1932.]

b. BRUG, S. L.—" Filariasis en elephantiasis." LXXVI (23), 2772-2776. [June, 1932.]

(a) De Langen has described the behaviour of heart and blood vessels in a youth, suffering with hookworm disease, who was practically cured in 6 weeks. B.G.P.

(b) Brug discusses the relationship between filariasis and endemic elephantiasis, with particular reference to Dutch East Indian cases.

Elephantiasis always occurs in areas of heavy filarial incidence but the objection to postulating a direct causation is that the filarial index of the general population is higher than that of elephantiasis cases. Brug provisionally accepts the hypothesis of bacterial complication according to the scheme: filariæ——lymph congestion predisposing to bacterial lymphangitis——repeated attacks of latter leading to death of filariæ——elephantiasis.

In the D.E.I. there is in places a suggestion that *Filaria bancrofti* tends to be associated with abnormalities of the genitalia and *F. malayi* with elephantiasis of the legs. In some localities the latter parasite has an index in elephantiasis cases higher than that in the general population. Extensive field observations are required rather than new theories.

B.G.P.

147—North American Veterinarian.

a. GUARD, W. F.—" Fistula of the withers." XIII (6), 19-23. [June, 1932.]
b. CHITWOOD, B. G.—" The association of *Rhabditis strongyloides* with dermatitis in dogs." XIII (6), 35-40, 8 figs., 16 refs. [June, 1932.]

(a) Guard states that he has been able to demonstrate *Onchocercous* (sic) *cervacalis* rather consistently in diseased ligamentatum nuchæ of withers and poll, but is not convinced that it is the cause of bursitis.

T.W.M.C.

(b) Chitwood records the first American case of *Rhabditis strongyloides* from the skin of dogs.

The parasite is described and illustrated. It was cultivated in nutrient agar but soon died off if the agar was sterile, or if the culture became mouldy. They grew if the pH was 6 to 8 and the temperature between 25° C. and 40° C. He was unable to experimentally infect dogs and believes that the parasite, even as a secondary invader, must be rare.

T.W.M.C.

148—Nuova Veterinaria.

a. MACCHIONI, G.—" Le alterazioni del sangue nella distomatosi epatica degli ovini." X (5), 3-12, 3 coloured figs., 2 tables. [15th May, 1932.]

(a) Macchioni discusses the blood picture in ovine distomiasis from observations on a considerable number of sheep.

He finds that a serious anæmia is caused by the parasite, the red cells dropping from about 12½ million to half this number, and sometimes to 3½ million. This diminution in number is always associated with change in form, volume and chromaphilic reaction. In the more marked cases Jolly's bodies and, more rarely, Cabot's bodies appear in the circulation and there is an increase of granulo-filamentous metachromatic substance. The white cells, except the lymphocytes (which decrease to about a third of normal) are increased, especially the basophiles and eosinophiles. The eosinophilia is not always proportionate to the degree of infection. " Thrombocytosis " is often marked, usually characterised by the presence of giant platelets.

T.W.M.C.

149—Orvosi Hetilap.

a. RAUSCH, Z.—" Féreghajtó kúrák." LXXVI (26), Clinical supplement, pp. 102-103. [2nd July, 1932.]

(a) In an article on the administration of anthelmintics to human patients Rausch recommends extract of male fern for cestodes, santonin for ascaris, and male fern, oil of chenopodium or thymol for trichuris, hookworm and strongyloides. For oxyuris it is more satisfactory to rely on hygienic measures. Various other well-known drugs are mentioned; the doses are given, and there are notes on general treatment before and after dosing.

B.G.P.

150—Parasitology.

a. HAMID, A.—" A cestode, *Oochoristica khalili* n. sp., from a snake, *Psammophis schokari* Forskål." XXIV (2), 238-240, 3 figs., 2 tables, 2 refs. [June, 1932.]

b. WARDLE, R. A.—" On the technique of cestode study." XXIV (2), 241-252, 2 figs., 13 refs. [June, 1932.]

c. DAVIES, E.—" On a trematode, *Ityogonimus lorum* (Duj. 1845), with notes on the occurrence of other trematode parasites of *Talpa europaea* in the Aberystwyth area." XXIV (2), 253-259, 1 pl., 2 tables, 5 refs. [June, 1932.]

d. JONES, E. I. & ROTHSCHILD, M.—" On the sporocyst and cercaria of a marine Distomid trematode from Nucula." XXIV (2), 260-264, 5 figs., 6 refs. [June, 1932.]

e. DAUBNEY, R. & HUDSON, J. R.—" *Oesophagostomum multifoliatum* n. sp. An undescribed nematode from sheep and goats." XXIV (2), 265-267, 5 figs., 2 refs. [June, 1932.]

f. SHARGA, U. S.—" A new nematode, *Tylenchus aptini* n. sp., parasite of Thysanoptera (Insecta: *Aptinothrips rufus* Gmelin)." XXIV (2), 268-279, 26 figs., 1 chart, 21 refs. [June, 1932.]

(a) Hamid gives a differential diagnosis of a new species *Oochoristica khalili* found in a Schokari Sand Snake which died in the Giza Zoological Gardens.

It differs from *O. herpestes* in the presence of a neck; circular suckers; absence of branching of the excretory vessels; the convexity of the nerve in the proglottis is towards the margin; the irregularity of the alternation of the genital pores; the number of testes 44—61; the size of the cirrus and the length—direction of the testis; the slightly wavy character of the vas deferens; the passage of the sex canals between the excretory vessels. R.T.L.

(b) Wardle deals with several useful points in routine methods for preparing cestodes for study.

The most suitable medium to delay fixation for some hours is decimolar NaCl to which 5 per cent. of egg white has been added. He gives simple technique for the rapid examination of the intestinal contents of mammals, birds and fishes and for the detection of plerocercoid stages in the muscles. The best method of applying fixative is to paint each helminth with a brush soaked in hot water (60° C) and then transfer it to cold 10 per cent. saline-formalin. The relative merits of carmine and hæmatoxylin staining are discussed and a useful summary of the various methods of section reconstruction concludes the paper. R.T.L.

(c) Out of 201 moles caught in Cardiganshire, Davies found 37 cases of infection with *Ityogonimus lorum* and 48 of infection with *I. talpæ*. The anatomy of *I. lorum* is described and figured and the systematic position of the species discussed.

The author supports Witenberg's conclusions that *I. filum* (Looss 1907) is a synonym of *I. lorum* (Duj. 1845) and that *I. lorum* (Gonder 1910) and *Distoma ocreatum* (Duj. 1845) are synonyms of *I. talpæ* (Gœze 1872). Other trematodes were found. Of these *Omphalomenta flexuosa* (Rud.) only is mentioned. R.T.L.

(d) Jones & Rothschild describe stages of a larval trematode found in 2 per cent. of *Nucula nucleus* dredged at Plymouth.

The cercaria which occurs in an unbranched sporocyst is spindle-shaped. The tail is a very short piece and is forked. It superficially resembles a *Bucephalus*. The cuticle is unarmed. There is no stylet or cystogenous organ. R.T.L.

(e) Daubney & Hudson state that a new species named *Œsophagostomum multifoliatum* is always found in association with the more common *O. columbianum* in sheep and goats in Kenya.

It possesses an inflated cephalic vesicle like *O. radiatum* but differs in possessing an external leaf crown. This consists of 30 elements. The eggs measure 0·15—0·165 × 0·068—0·08 mm. and their size when found in the fæces is sufficient to warrant a special search for the adult worms, as *Nematodirus*, the only other Strongyle with eggs of such large size, has not yet been recorded from Kenya. R.T.L.

(f) Sharga records the occurrence of a new species of *Tylenchus*, *T. aptini*, parasitic in *Aptinothrips rufus*.

The systematic position of the parasite is discussed, and the morphology of the parasitic stages of the life cycle is described; the free living stages are unknown. Two distinct types of larvæ are described and it remains uncertain whether one or two species of nematode are represented. The female is a sac-shaped, degenerate form, lacking alimentary canal and anus, and apparently highly prolific. Of flies collected from ten localities in the vicinity of Edinburgh only those from two areas were found to be infected. Infested thrips were found all the year round, the incidence being highest in summer and lowest in spring. No infested males were found. Infested females were found to be sterilized. Larvæ pass through from the body cavity into the intestine and are freed through the anus.
M.J.T.

151—Philippine Journal of Science.

a. AFRICA, C. M.—" Studies on experimental creeping eruption in the Philippines." XLVIII (1), 89-101, 5 plates, 15 refs. [May, 1932.]

b. YUTUC, L. M.—" Experiments on the transmission of surra by means of the dog hookworm *Ancylostoma caninum*." XLVIII (4), 589-595, 4 refs. [August, 1932.]

(a) Although *Ancylostoma braziliense* is common in cats, dogs, and human beings in the Philippines no cases of creeping eruption have been recorded. Africa has produced the eruption experimentally in two Philippine volunteers. He supports Darling's contention that there are two distinct types of *A. braziliense* viz. :—Oriental and Occidental.
R.T.L.

(b) Yutuc has found no evidence to support the view that the dog hookworm can act as a place of refuge for the surra trypanosome during the administration of trypanocidal substances to the host. The surra trypanosomes are ingested and are retained in a viable state by the helminths but they are destroyed also within the worm by the drug.

R.T.L.

152—Policlinico. [Sezione Pratica.]

a. PICARDI, G.—" Echinococcosi delle vie biliari extraepatiche." XXXIX (35), 1361-1363. [29th August, 1932.]

b. SERAFINI, G.—" Di un caso di empiema circoscritto a doppia sacca simulante la cisti di echinococco." XXXIX (35), 1364-1366. [29th August, 1932.]

(a) Picardi reports the case of a woman with a greatly dilated common duct, due to the presence of a hydatid cyst which was successfully drained and removed, and reviews the literature of similar cases. B.G.P.

(b) Serafini quotes the case of a child of 5 in which hydatid in the lung was diagnosed radiographically whereas the operation revealed merely a circumscribed empyema. B.G.P.

153—Prace Wydziału Chorób Roślin Państwowego Instytutu Naukowego Gospodarstwa Wiejskiego w Bydgoszczy.

a. KÉLER, S.—" Przyczynek do znajomości pasorzytów muchy szwedzkiej." No. 11, 1-3, 1 table. [1932.]

(a) Kéler discusses the economic significance of *Tylenchinema oscinellæ* in Poland, where he has demonstrated that it occurs.

The findings in dissections of 2,700 flies during July, August and September are tabulated. Of the 182 infected specimens all were found to be completely sterilized by the presence of the parasite. The recording of a greater percentage of infected females than infected males, is attributed to the fact that parasitized males are heavier than normal and therefore fly lower, while the reverse occurs in the case of parasitized females.

M.J.T.

154—Proceedings of the Imperial Academy, Tokyo.

a. KABURAKI, T. & IMAMURA, S.—" Mermithid-worm parasitic in leaf-hoppers, with notes on its life history and habits." VIII (4), 139-141, 6 figs. [1932.]

(a) The authors give a brief technical description of *Agamermis unka* n. sp., parasitizing leaf-hoppers injurious to the rice plant, and add remarks on its biology.

The mermithid appears to be closely allied to *Mermis albicans* Sieb. and *Agamermis decaudata* Cobb, Steiner & Christie, both parasites of insects, and has been taken from leaf-hoppers at various places in Kiushiu Island. The parasite escapes from the hosts, *Nilaparvata* [=*Delphacodes ?*] *oryzæ*

Mats., and *Sogoto* [=*Sogata ?*] *furcifera* Horv., into the soil in early autumn and reaches maturity during winter, frequenting a depth of about 10 cm. Mating occurs about mid-May, oviposition in July and August and the larva hatches in 3 weeks. It eventually appears on the surface of the field, swimming in the irrigation water, until it reaches the rice plant where it finds an opportunity to enter the leaf-hopper which is usually resting on the plant near the water. The authors consider that infection probably happens at dewy night-time. One or two, rarely more, worms generally parasitize a host which becomes inactive with the abdomen highly swollen. Parasitic life lasts 2-3 weeks, the nematode escaping from the insect, usually during the nymphal stage, through the thin body wall between abdominal segments. The parasite is considered to play an important rôle in controlling some leaf-hoppers. J.N.O.

155—Proceedings of the Society for Experimental Biology and Medicine.

a. MILLER, Jr., H. M.—" Transmission to offspring of immunity against infection with metazoan (cestode) parasite." XXIX (9), 1124. [June, 1932.]

b. MILLER, Jr., H. M.—" Acquired immunity against a metazoan parasite by use of non-specific worm materials." XXIX (9), 1125-1126. [June, 1932.]

(a) Miller finds that a certain degree of protection against *Tænia tæniæformis* is inherited by rats.

The young of immune and control rats were infested with onchospheres of *Tænia tæniæformis*. Cyst development was almost completely inhibited in the offspring of infected or of immune females. The immunity is passive and only lasts for about six weeks after birth. P.A.C.

(b) Miller has brought about immunity to *Tænia tæniæformis* in rats by the introduction into the peritoneal cavity of pieces of *T. pisiformis*. Powdered material of *Diphyllobothrium latum*, *Tænia saginata*, *Hymenolepis sp.* and *Dipylidium sp.* afforded no protection to *T. tæniæformis*.

P.A.C.

156—Proceedings of the United States National Museum.

a. ZELIFF, C. C.—" A new species of cestode, *Crepidobothrium amphiumæ* from *Amphiuma tridactylum*." LXXXI (3), 1-3, 1 pl. [1932.]

(a) Zeliff describes *Crepidobothrium amphiumæ* n. sp., from the intestine of *Amphiuma tridactylum* from Louisiana.

No cestode has hitherto been recorded from this urodele. It is differentiated from *C. lonnbergii*, *C. cryptobranchii* and *C. magnum* and has close similarities with *Ichthyotænia filaroides* and *I. hylæ*. R.T.L.

157—Ribarski List.

a. WIŚNIEWSKI, L. W.—" *Cyathocephalus truncatus*, Pallas, ein Fischparasit aus dem Vrelo Bosne." VII (3/4), Reprint in German, 4 pp. [1932.]

(a) Wiśniewski describes from a practical standpoint the cestode *Cyathocephalus truncatus* parasitic in trout and other *Salmonidæ* and in *Perca fluviatilis, Lota lota,* and *Esox lucius.*

An infection of 100 per cent. was found in 60 trout (all ages) from the Bosna, each fish containing on the average 10 to 16 parasites; the fish were undersized and pale, and the local reduction of trout population, even under protection and culture, may well be ascribable to this parasite. *Gammarus spinicaudatus* and *G. bosniacus* are the local vectors, about 10 per cent. being infected. Control is difficult, as these amphipods are used by pisciculturists as food for the young trout. The life history is fully described. [See Abstract No. 176a.] B.G.P.

158—Schweizer Archiv für Tierheilkunde.

a. WIRZ, A.—"Beitrag zur Behandlung der Leberegelseuche der Schafe mit 'Distex Atarost.'" LXXIV (2), 63-77. [1932.]

(a) Wirz has used a proprietary preparation, called "Distex Atarost," successfully in the treatment of 400 cases of fasciola infection in sheep.

The drug is stated to have the following composition:—Ethylene chloride 25 parts per 100, Carbon tetrachloride 40 parts, Liquid paraffin 35 parts and Male Fern 0·5 to 1 part. It was administered diluted with four volumes of gruel in the dosage of 2 cc. per 10 Kg. body weight. A single dose only was required and overdosing is to be avoided. T.W.M.C.

159—Schweizerische Medizinische Wochenschrift.

a. FELLENBERG, R. v.—"Ein Fall von Spulwurm-Ueberempfindlichkeit." LXII (25), 582. [18th June, 1932.]

b. POSSELT, A.—"Erster und einziger Bericht über einen spontanen und sichtbaren Durchbruch von Askariden durch den Nabel und zwar bei einer Erwachsenen." LXII (29), 661-663. [16th July, 1932.]

(a) Fellenberg briefly describes an unusual case of ascaris infection in a boy of 3, with a simultaneous urticaria in the boy's mother. When the last ascarid was removed the urticaria disappeared; reinfection of the boy was immediately followed by a return of urticaria in the mother. This is a case of marked hypersensitivity on the part of the woman.

B.G.P.

(b) Posselt gives details of the first observed case of spontaneous perforation of the umbilicus by ascaris in an adult. The event, which occurred in a healthy woman of 32 in the year 1897, was not preceded by abscess formation and was unaccompanied by any swelling or inflammation. In all, five worms escaped in this way. The literature dealing with perforation of the gut and of the abdominal wall by ascaris is reviewed.

B.G.P.

160—Science.

a. SCOTT, J. A.—"A pipette for the dilution counting of hookworm eggs." LXXVI (1964), 170. [19th August, 1932.]

b. LINTON, E.—"On the taxonomic position of *Echinorhynchus sagittifer* Linton." LXXVI (1965), 193, 5 refs. [26th August, 1932.]

(a) J. Allen Scott illustrates a pipette consisting of a 12 cm. length of capillary glass tubing with an inside diameter of 1.0 to 1.1 mm. and external diameter of about 7 mm. fused to an ordinary piece of glass tubing of the same outside diameter to make a total length of 20 cm. The junction inside should be perfectly smooth and even and the end of the capillary tubing should be ground to a smooth tip. It is then calibrated. This pipette eliminates the danger of accidentally filling the rubber bulb and so contaminating successive specimens in use for the counting of hookworm eggs. R.T.L.

(b) Linton finds that *Echinorhynchus socialis* Leidy 1881 is a synonym of *E. gadi* not *E. socialis* and that *E. sagittifer* Linton 1889 properly belongs to the genus *Serrasentis* van Cleave 1923. It should be named *Serrasentis sagittifer* (Linton 1889). R.T.L.

161—Semana Médica.

a. PARDINA, J. M.—"Observación de huevos de *Tænia saginata* en las materias fecales." XXXIX (21), 1616-1617. [26th May, 1932.]

b. MacDONAGH, E. J. M.—"Parásitos de peces comestibles. VI. Sobre una 'Ichthyotænia' y oncosfera del pejerrey." XXXIX (25), 1917-1921, 6 figs. [23rd June, 1932.]

c. ALCARAZ, R. A.—"La presencia de huevos de '*Tænia saginata*' en las materias fecales." XXXIX (30), 261-262, 2 refs. [28th July, 1932.]

(a) Pardina always finds eggs in the fæces of *Tænia saginata* cases. This is explained by the fact that detached gravid segments extrude eggs through a ruptured uterine branch, a fact observed in segments expelled after a saline purge. B.G.P.

(b) MacDonagh records the presence of adult cestodes of the genus *Ichthyotænia* and of cestode eggs in the onchosphere stage, in the fish *Basilichthys bonariensis* from lakes Mar Chiquita and Gomez (Argentine). The onchospheres, which were considered to be of a different species from the adults, contained six large hooks arranged in a cluster with the bases apposed. In the adult Ichthyotænias were four suckers but no rostellum. Segmentation was irregular and incomplete save in the case of the terminal gravid segments which were occupied by an irregular uterine mass. The validity of the generic name *Ichthyotænia* (syn. *Proteocephalus*) is discussed. B.G.P.

(c) Alcaraz finds that free ova always appear in the fæces of *Tænia saginata* patients, contrary to usual text-book opinion.

The terminal segments separate one by one (not in chains as in *T. solium*) and in so doing cause a rupture of the uterus followed by active expulsion of ova, as can be seen with segments in physiological saline. B.G.P.

162—Smallholder Gardener.

a. ANON.—" Eelworm is imperilling our potatoes." XLVII (1,171), 816. [27th August, 1932.]

(a) A measure for controlling *Heterodera schachtii* in gardens and allotments is described.

The crop is first to be lifted, and haulms and chats burnt. A solution of corrosive sublimate—4 oz. to 50 pints of water—is then to be applied to the infected soil at the rate of 2 gallons per square yard. The ground is then to be fallowed for a month or six weeks and potatoes should be withheld the following year. M.J.T.

163—Taiwan Igakkai Zasshi.

a. YOKOGAWA, S. & WAKEJIMA, T.—" On fecal examination for parasites of school children of Formosa-Chinese parentage, especially medical and biological observations on *Ascaris lumbricoides*." XXXI (6), 60-63. [June, 1932.]

(a) Yokogawa & Wakejima describe the deleterious influence of *Ascaris lumbricoides* on the work and nutrition of Formosan school children. They found unfertilized eggs more frequently in heavy than in light infestations. About 73 per cent. of all treated cases became re-infested within 6-7 months. R.T.L.

164—Tidsskrift for Planteavl.

a. ANON.—" Plantesygdomme i Danmark 1931. Oversigt, samlet ved Statens plantepatologiske Forsøg." XXXVIII (3), 349-390. (Summary in English). [1932.]

(a) Among the plant diseases and pests recorded in Denmark in 1931, the nematodes *Heterodera schachtii* and *Tylenchus dipsaci* are listed.

Heterodera schachtii attacking oats, barley and wheat has been found to occur frequently, particularly in Jutland. The increase in the infection during the cultivation of barley has been so great that the common practice of following barley with oats has in many cases been abandoned. Two cases of *H.schachtii* on potatoes in town gardens have been discovered and taken under public control.

Tylenchus dipsaci has been reported infecting both red and white clovers, but two distinct strains appear to be involved, and there is some evidence of differences in varietal resistance in the case of each host.

M.J.T.

165—Tierärztliche Rundschau.

a. SPREHN, C.—"Diagnose und Behandlung der häufigsten Pelztierkrankheiten." XXXVIII (23), 389-392, 5 figs. [5th June, 1932.], XXXVIII (24), 407-411, 5 figs. [12th June, 1932.]

(a) In these two articles Sprehn explains the diagnosis and treatment (respectively) of the common diseases of fur-bearing animals. These diseases are mainly of metazoan origin, helminths and coccidia being the principal parasites.

The animals considered are the silver fox, arctic fox, mink and nutria (coypu). The parasites are mainly those referred to by the author previously (Abstract 45a). For diagnosis, the examination of fæces by Fülleborn's salt-flotation method is recommended, with the caution that trematode eggs will not float in salt solution. The various eggs and larvæ to be met with are described and figured.

For ascariasis in foxes (especially whelps) tetrachlorethylene is suggested, the dose being proportional to the intestinal volume rather than to the body weight. Tetrachlorethylene is recommended also for most other parasites; male fern for tapeworms. The biology of each parasite is considered in turn and appropriate prophylactic measures are outlined. Suitable textbooks and periodicals [in German] are mentioned in the first article. B.G.P.

166—Tijdschrift voor Diergeneeskunde.

a. CLARENBURG, A.—"Onderzoekingen over de levensvatbaarheid van *Cysticercus inermis*." LIX (1), 1-18. [1st January, 1932.]

b. HOOGLAND, H. J. M.—"Galgang-carcinoom na distomatose bij den hond." LIX (3), 241-245, 4 figs., 2 refs. [1st February, 1932.]

c. SIMONS, S.—"Een geval van *Holostomum cuticula* Nordmann bij voorns en bleien." LIX (12), 779-780. [15th June, 1932.]

(a) Clarenburg has tested, under various conditions, the viability of *Cysticercus bovis* in meat obtained from a calf 9 months after experimental feeding with ripe proglottids.

Active evagination of the scolex was best obtained with bile, pancreatic extract, trypsinogen, pancreatin, sodium taurocholate or sodium glycocholate solutions at 40° C. This occurred feebly even after the meat had been kept 41 days at just below freezing point, and vigorously (with movements of neck and suckers) after 28 days. The cysticerci were very resistant to pancreatic extract; in 2½-inch slices of meat they were killed after freezing for 65 hours at −8° to −10° C., after salting for 5 days in 20 per cent. and 25 per cent. brine, and after immersion for 15 minutes in boiling water. X-rays were apparently without effect. Infected meat chilled at 4° C. for 3 weeks cannot be regarded as harmless. B.G.P.

(b) Hoogland has described in detail an hepatic tumour associated with the presence of *Opisthorchis felineus* in a dog.

The dog was killed because of heart disease, and the tumour (found incidentally at post mortem) was a malignant one of the adenocarcinomatous type. Histological examination (as in several previous cases of carcinomata in cats) indicated that the parasite was the cause of the tumour. B.G.P.

(c) Simons records the presence of larvæ of *Holostomum cuticula* Nordmann, encysted in the fins and under the scales of white breams and roaches. The fungus *Aspergillus niger* occurred in and around the cysts and the author attributes the high mortality of the fish mainly to this fungus. B.G.P.

167—Transactions of the American Microscopical Society.

a. LA RUE, G. R. & BARONE, G. H.—"*Alaria oregonensis* from the coyote (Trematoda : Alariidæ)." LI (3), 199-208, 1 pl., 15 refs. [July, 1932.]

b. GOODRICH, A. L.—"*Rictularia scalopis*, sp. nov., a nematode from the mole, *Scalops aquaticus* (Linn.)." LI (3), 216-218, 1 pl., 5 refs. [July, 1932.]

(a) A more detailed and illustrated account is now given by La Rue & Barone of *Alaria oregonensis* first described by them in 1927.

The species resembles most closely *A. arisæmoides* but is smaller; its holdfast is thicker; the oral sucker is significantly smaller and its pharynx larger. The ovary is of different shape and is perhaps larger. The ampulla, length of oviduct, position of oötype and of Mehlis' gland, the extent of the transverse loop of the uterus and the size of the eggs, all differ. The vesicula seminalis is more complex in character. R.T.L.

(b) Goodrich describes the female of a new species of *Rictularia* named *R. scalopis* from *Scalops aquaticus* taken in Manhattan, Kansas.

In contrast to the known American species, the specimens examined showed large cervical and cephalic papillæ, while there were but few combs anterior to the vulva. R.T.L.

168—Transactions of the Royal Society of Tropical Medicine and Hygiene.

a. FAIRLEY, N. H.—"The skin test and complement fixation reactions in Filariasis." XXV (4), 220-221. [January, 1932.]

b. CHESTERMAN, C. C.—"Specimens of *Oncocerca volvulus* from the neighbourhood of Stanleyville, Belgian Congo." XXVI (1), 1-2. [June, 1932.]

c. O'CONNOR, F. W.—"The ætiology of the disease syndrome in *Wuchereria bancrofti* infections." XXVI (1), 13-47, 51 refs. [June, 1932.]

d. CONNELL, W. K. & BUCHANAN, J. C. R.—"Guinea worm disease in Tanganyika." XXVI (1), 99. [June. 1932.]

e. MacHATTIE, C. & CHADWICK, C. R.—"*Schistosoma bovis* and *S. mattheei* in Irak with notes on the development of eggs of the *S. hæmatobium* Pattern." XXVI (2), 147-156, 2 pls., 16 refs. [August, 1932.]

f. PATERSON, J. C.—"Observations on filariasis in Colombia." XXVI (2), 169-176, 1 table, 1 chart. [August, 1932.]

g. PURCELL, F. M.—"Acute colitis due to *Ascaris lumbricoides* simulating dysentery." XXVI (2), 199. [August, 1932.]

(a) The use of the skin test in suspected cases of filariasis was demonstrated with four patients by means of the intradermal injection of 0.25 c.cm. of a 0·1 per cent. saline extract of *Dirofilaria immitis* powder. Positive reactions were demonstrated by the rapid development of an extending wheal with pseudopodia and a surrounding erythematous zone. They attained a diameter of at least 2·4 cm.—the size of a shilling. In negative cases the wheal rarely attained a diameter of more than 2·0 cm. —the size of a sixpence. It is essentially a group reaction for filariasis. Natives from endemic areas frequently give positive results to the test when filaria cannot be demonstrated. They presumably are old cases in which a spontaneous recovery has occurred. Patients with intestinal parasites do not react.

A separate demonstration of the technique of the complement fixation reaction for filariasis made use of the alcoholic extract of powdered *Dirofilaria immitis*. *Loa loa* cases always gave a strong positive reaction as did generally the few cases of active *Filaria bancrofti* that had been examined. The blood test, however, becomes negative by the time elephantiasis develops. P.A.C.

(b) In a case with multiple cold abscesses in legs, thigh and trunk, a number of adults of *Onchocerca volvulus* were found by Chesterman. A complete female measured 50 cms. The author also reports a case of elephantoid scrotum weighing one pound after removal and this is considered to have been caused by *O. volvulus*. The subcutaneous tissue was more compact and solid and not so œdematous as in *F. bancrofti* cases. R.T.L.

(c) O'Connor calls in question the view that the presence of bacteria is necessary for the occurrence of most of the pathological changes and all the inflammatory phenomena associated with Filariasis, and attempts a revaluation of the respective rôles of bacteria and parasites in " Filarial " diseases. R.T.L.

(d) Connell & Buchanan report a case of Guineaworm acquired in Tanganyika. The histories of the two cases previously recorded suggest that they were possibly acquired in Uganda. R.T.L.

(e) MacHattie & Chadwick have been able to examine over 4,000 specimens of *Schistosoma bovis* from goats and equines, in addition to sheep and cattle, in Irak. As a result they find variations which lead them to reject *S. mattheei* as a valid species.

They find that the vitellaria may occupy anything from one quarter to two-thirds of the body length, about one-half being usual. The ova show variation from the typical *bovis* shape to the *mattheei*- and even *hæmatobium*-like shapes : *S. hæmatobium* is common in man in Irak, but the *S. bovis* infections are always portal and intestinal, and in females with *hæmatobium*-like eggs (about 0·2 per cent.) the vitellaria occupy one-half the body length. The only other schistosome definitely present in Irak is *S. turkestanicum*. B.G.P.

(f) Paterson shows that filariasis bancrofti occurs in 16 per 1,000 employees of the Tropical Oil Concession, Colombia, where the symptoms (involvement of inguinal lymph glands, but rarely elephantiasis) are relieved by intravenous injection of T.A.B. vaccine.
Intravenous injections of tartar emetic were also occasionally beneficial. The T.A.B. vaccine appears to have no effect upon numbers of microfilariæ in the blood, but its use does enable patients to return to work. Clinical details of 11 cases are given. B.G.P.

(g) Purcell records the case of a child of 1½ years with typical dysenteric symptoms which disappeared when the child passed a tangled knot of 12 almost adult *Ascaris*, after the administration of an anthelmintic. B.G.P.

169—United States Department of Agriculture. Miscellaneous Publication.

a. LINK, G. K. K. & RAMSEY, G. B.—" Market diseases of fruits and vegetables." No. 98, 62 pp., 15 pls., 196 refs. [February, 1932.]

(a) Link & Ramsey give brief accounts of the occurrence, symptoms and effects of the potato-diseases which are found in the United States.
The influence of infections of *Caconema radicicola* on the marketable value of potatoes is discussed, and a short account of the life cycle of the parasite is given. Methods by which the disease is spread and the difficulty of controlling the parasite are emphasized. Such methods of control as have been found effective are described. M.J.T.

170—Veterinary Medicine.

a. ANON.—" Sanitation saves pigs at Naval Prison Farm." XXVII (7), 320. [July, 1932.]

(a) Since the introduction of the M'Lean County system of pig sanitation, the mortality in young pigs has been practically eliminated.
They grow normally and develop to maturity at least two months earlier. Kidney worm disease has also been reduced to a minimum. T.W.M.C.

171—Veterinary Record.

a. CHAMBERS, F.—" The parasitic origin of poll evil and fistulous withers." XII (27), 759. [2nd July, 1932.]
b. CAMERON, T. W. M.—" The lung worms of domesticated animals." XII (28), 775-781. [9th July, 1932.]
c. BROAD, W. T. D.—" Husk in cattle." XII (29), 836. [16th July, 1932.]
d. PILLERS, A. W. N.—" Notes on parasites in 1931." XII (32), 898-899. [6th August, 1932.]

(a) Chambers believes that it is yet to be proved that *Onchocerca cervicalis* is the cause of poll-evil and fistulous withers in horses.

He usually associated the disease with trauma, although not all cases have such a history. If the diseases mentioned are due to this parasite, he suggests that gonitis may also be caused by it. T.W.M.C.

(b) Cameron discusses the various helminths important pathologically to domesticated animals, especially in Britain. He deals especially with Hydatid, Ascarids, Syngamus and the Metastrongylidæ.

In each case, the parasite is briefly described, its life history discussed and its pathological effects, treatment and prevention considered. He believes that these worms do a considerable amount of damage to animals, but owing to the wide regenerative powers of the lungs, death is relatively infrequent and debility is the main source of loss. Treatment is still unsatisfactory and prevention is much more important. T.W.M.C.

(c) Broad asks how Dictyocaulus infection is carried over from one season to another.

He has seen the disease in May, but usually it does not appear until August, disappearing after a few sharp frosts late in autumn. Only once has he diagnosed husk—and then clinically only—in January. T.W.M.C.

(d) Pillers records the parasites which he has had submitted to him for diagnosis during 1931.

The unusual helminths in his record are *D. latus* from a Canadian bear; *A. lumbricoides* from a calf; *O. cervicalis* from cases of poll-evil (Lancs.) and fistulous withers (Yorks.) and *Thelazia californiensis* from a dog from California. He found that *Amœbotænia sphenoides* was a cause of death in chickens. T.W.M.C.

172—Zeitschrift für Fleisch- und Milchhygiene.

a. THOMAS, F.—"Trichinen beim Fuchse." XLII (11), 217. [1st March, 1932.]
b. BEHR.—"Trichinenfunde beim Fuchse auch in Baden." XLII (11), 217. [1st March, 1932.]
c. STENGEL.—"Zur Bekämpfung der Rinderfinne." XLII (13), 258-259. [1st April, 1932.]

(a) Thomas records a case of trichina, in fox flesh in Ballenstedt, in which the cysts were circular or oval. They are being fed experimentally to mice. B.G.P.

(b) Behr has found two trichinized foxes from the Black Forest district. Circular cysts predominated with here and there a lemon-shaped cyst. Trichina inspection in Baden is advocated. B.G.P.

(c) Stengel shows that an effective campaign against *Cysticercus bovis* is being waged in Württemberg by the offer to *T. saginata* carriers of a reward of 5 R.M. for every tapeworm produced complete with scolex. Where medical treatment is not sought, good results are apparently obtained on an exclusive diet of prunes and salt herrings for two or three days.

It is hoped in this way to reduce the large number of cattle rejected by the meat inspectors. For routine inspection the author recommends opening the pericardium as cysts are plentiful in the heart muscles. Collected tapeworms should be placed at the disposal of schools for educational purposes. B.G.P.

173—Zeitschrift für Parasitenkunde.

a. ECKMANN, F.—" Über Zwei neue Trematoden der Gattung *Aspidogaster*." IV (3), 395-399, 3 figs., 7 refs. [May, 1932.]

b. KHALIL, M.—" Parasites from Liberia and French Guinea, first part : Nematoda." IV (3), 431-458, 23 figs. [May, 1932.]

c. SZIDAT, L.—" Über cysticerke Riesencercarien, insbesondere *Cercaria mirabilis* M. Braun und *Cercaria splendens* n. sp., und ihre Entwicklung im Magen von Raubfischen zu Trematoden der Gattung *Azygia* Looss." IV (3), 477-505, 22 figs., 19 refs. [May, 1932.]

d. SZIDAT, L.—" Parasiten aus Liberia und Französisch-Guinea. II. Teil : Trematoden." IV (3), 506-521, 6 figs., 18 refs. [May, 1932.]

e. WITENBERG, G.—" On the cestode subfamily *Dipylidiinæ* Stiles." IV (3), 542-584, 45 figs., 2 pp. refs. [May, 1932.]

(a) Eckmann describes and figures two new species of the genus *Aspidogaster* : *A. decatis* from the intestine of *Cyprinus carpio* (Sea of Antioch) and *A. enneatis* from the intestine of *Barbus* sp. (Sea of Tiberias). He erects a new genus, *Lobatostoma*, to receive two species, *L. ringens* (Linton, 1907) and *L. hemostoma* (MacCallum, 1913), which have lobular processes around the mouth, revises the generic diagnosis of *Aspidogaster* and gives a key to the genera of the *Aspidogastridæ*. B.G.P.

(b) Khalil lists a number of nematode parasites from man and domesticated and wild animals collected by Vogel in Liberia and French Guinea.

Seven new forms are : *Pteridopharynx dawoodi* n.sp. from small intestine of an elephant ; *Colobostrongylus sandgroundi* n. sp. from small intestine of *Colobus badius* ; *Heligmonina vogeli* n. sp. from small intestine of *Rattus rattus* ; *Ibrahimia ibrahimia* n.g., n. sp., from rectum of a tortoise ; *Heterakis travassosi* n. sp. from cæca of domestic fowl ; *Oxyspirura crami* n. sp. from eye of *Otis melanogaster* ; and *Tawila tawila* n.g., n. sp. from subcutaneous tissue of *Colobus badius* [variant spellings of the 5th and 6th species appear on p. 431]. A new sub-family, *Ibrahaimiinæ* (Atractidæ) is created for *Ibrahimia* ; *Tawila* falls in the *Setariinæ*. B.G.P.

(c) Szidat finds that the giant fork-tailed cystocercous cercaria *C. mirabilis* Braun, from *Lymnæa palustris* (East Prussia) develops in the stomach of piscivorous fish into *Azygia lucii* Mueller. A similar cercaria, *C. splendens* n. sp. from *Planorbis planorbis*, probably belongs to the same genus. The morphology and biology of the cercariæ and the development of the tail-cyst are described and illustrated, and *Azygia* is tentatively referred to the *Strigeatoidea*. B.G.P.

(d) Szidat describes 9 species of trematodes, of which 5 are new, collected by Vogel from Liberia and French Guinea.

The new species are : *Polystomum africanum* from the bladder of *Bufo regularis ; Opisthioglyphe magnus* from the intestine of the snakes *Causus rhombeatus* and *Thelotornis kirtlandi ; Haplometroides rappiæ* from the tree-frog *Rappia concolor ; Cyclocœlum Vogeli* from the trachea and air-sacs of *Francolinus ahantensis ;* and *Strigea intermedia* from the small intestine of *Corvus albus* and the domestic fowl. B.G.P.

(e) Witenberg reviews in detail the sub-family *Dipylidiinæ* which he re-defines (on the basis of double genitalia) so as to include only *Dipylidium*, *Diplopylidium* and *Joyeuxia :* seven other genera formerly included are placed in a new sub-family *Monopylidiinæ.*

Of 34 species of *Dipylidiinæ* he considers only 7 as well established ; these are re-described and figured from local (Palestine) and type material, and an extensive table of synonyms is appended. B.G.P.

174—Zeitschrift für Veterinärkunde.

a. SCHWARZ.—" Systematische Kotuntersuchungen bei Heereshunden." XLIV (5), 172-176. [May, 1932.]

(a) Schwarz examined the fæces of 12 military dogs by 4 flotation methods all of which showed 2 dogs to be infected with *Ascaris marginata ;* both dogs had an eosinophilia of about 10 per cent., the values for the remainder varying between 2·3 and 5·4 per cent. The best flotation method was that of Hobmaier & Taube, a D.C.F. method. B.G.P.

175—Zentralblatt für Bakteriologie.

a. GALLI-VALERIO, B.—" Notes de parasitologie et de technique parasitologique." CXXV (1/2), 129-142. [6th July, 1932.]

b. HÖST, P.—" *Phocascaris phocæ*, n.g., n. sp., eine neue Askaridenart aus *Phoca grœnlandica* Fabr." CXXV (5/6), 335-340, 7 figs. [27th August, 1932.]

(a) Galli-Valerio, impressed with the importance both of experimental and comparative pathology in the study of epidemiology, has arranged his notes on the presence of different species of parasites under their hosts.

His list comprises 56 hosts and records three new nematode species—one in *Lutra vulgaris* named *Strongylus lutræ*, the second named *Acanthoxyurus sciurorum* in *Sciurus vulgaris* var. *alpina* and the third *Rictularia muris* in the intestine of *Mus musculus* near Lausanne.

In a note on technique, he adds that the eggs of certain helminths show well on mounting in Canada Balsam if allowed to dry on the slide after fixation in a watery solution of 4 per cent. formalin. R.T.L.

(b) Höst describes *Phocascaris phocæ* n.g., n. sp., (*Anisakinæ*) from the stomach and small intestine of *Phoca grœnlandica* from the White Sea.

About 100 specimens were secured from 5 seals but of these only 16 were sexually mature. The spicules are long and sub-equal and there is no accessory piece. The vulva is in the anterior half of the body. Thin-shelled oval eggs are laid in a segmented condition. The parasites burrow deeply into the mucosa provoking the formation of granulation tissue with round-cell infiltration, but no eosinophiles were seen. The parasite shows relationships with *Contracæcum*, *Clœoascaris* and *Heterotyphlum*.

B.G.P.

176—Zoologischer Anzeiger.

a. WIŚNIEWSKI, L. W.—" Zur postembryonalen Entwicklung von *Cyathocephalus truncatus* Pall." XCVIII (7/8), 213-218, 2 figs., 4 refs. [25th April, 1932.]

b. PINTNER, T.—" Sinnespapillen am Genitalatrium der Tetrarhynchen." XCVIII (11/12), 295-298, 1 fig., 4 refs. [25th May, 1932.]

c. SZIDAT, U.—" *Dicranocercaria brachycerca* n. sp., der Typ einer neuen Gruppe gabelschwänziger Cercarien." XCVIII (11/12), 317-322, 3 refs. [25th May, 1932.]

d. DOGIEL, V.—Eine neue in Acipenseriden parasitierende Nematodengattung aus der Familie Acuariidæ." XCIX (9/10), 263-269, 4 figs. [1st August, 1932.]

(a) Wiśniewski has studied, near Sarajevo, the complete life-cycle of the pseudophyllid cestode *Cyathocephalus truncatus*, adult in *Salmonidæ*, and has brought to light several interesting features.

The egg, which has a very large operculum, develops in the fish's excrement (and not in pure water) into an onchosphere devoid of embryonic hooks, glands and ciliated epithelium. The developed egg is swallowed by species of *Gammarus* in which it penetrates into the body cavity, but only in young forms. The older crustaceans are immune. The resulting procercoid containing fully developed gonads is ingested with the intermediate host by a fish, in the intestine of which lives the mature worm,—genetically representing the plerocercoid stage and thus displaying neoteny.

B.G.P

(b) Pintner finds that there are sensory papillæ bearing nerve-endings around the genital atrium in such tetrarhynchids as *Lacistorhynchus tenuis* and *Heterotetrarhynchus institatum*. B.G.P.

(c) U. Szidat has found, from *Vivipara vivipara*, a new furcocercous (longifurcate) cercaria, *Dicranocercaria brachycerca* n. sp., which she regards as a type of a new group standing between the furcocercous and xiphidio-cercariæ. B.G.P.

(d) In two Caspian fishes *Acipenser stellatus* and *A. güldenstädti*, Dogiel has found a new nematode which belongs to a new genus *Cyclozone* in the family *Acuariidæ* with *Cyclozone acipenserina* as type and only species. R.T.L.